

# THE American Journal of Education.

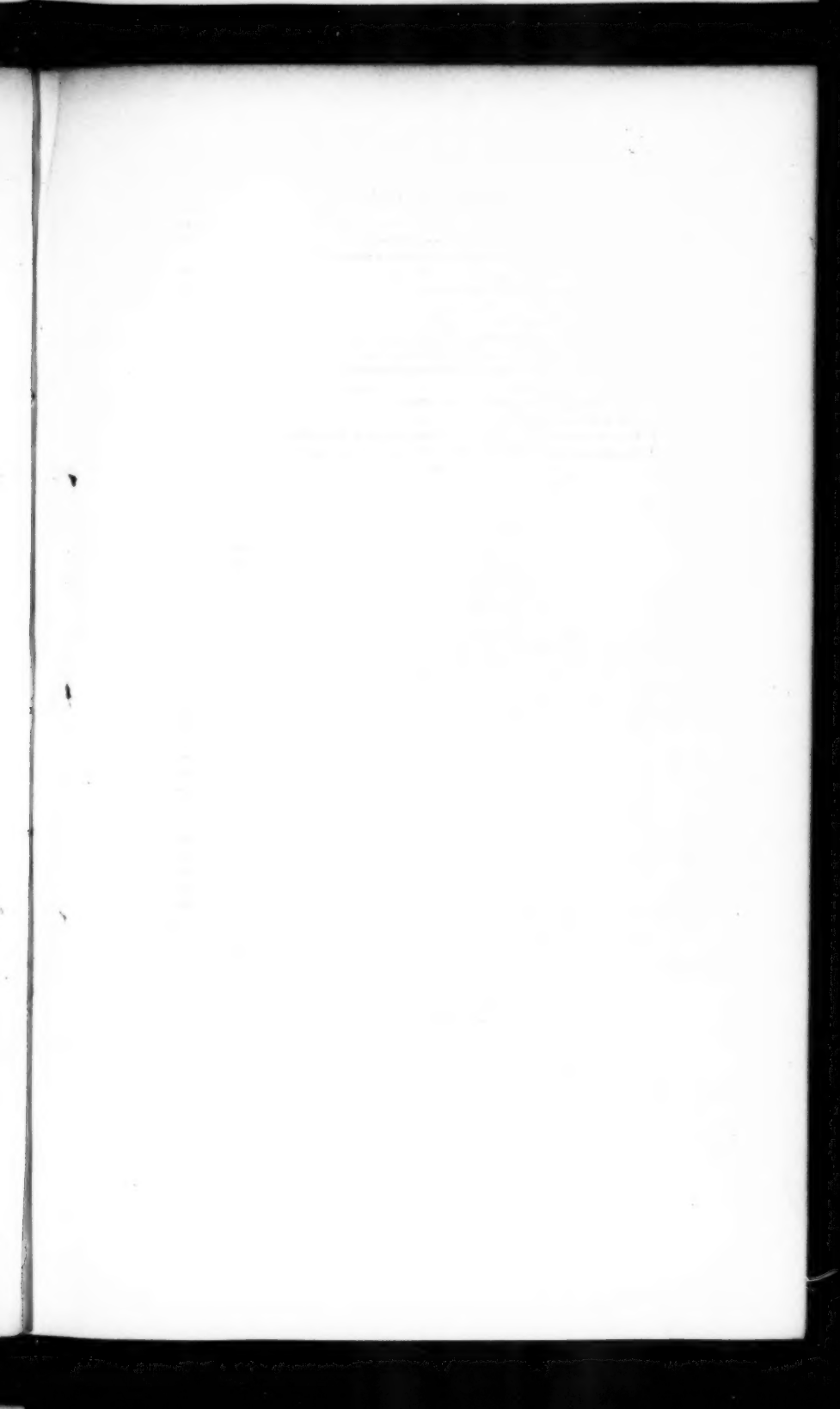
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*Painted by M. Wright*

*Engraved by J. Andrew*

*Thomas Downe*

Thomas Downe, Esq., of the County of Kent, was born in the year 1750.  
 Died in Charleston, December 28, 1822.  
 Died in Cambridgeport November 4, 1858.





## L. THOMAS DOWSE.\*

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THOMAS DOWSE, whose devotion to books under circumstances generally deemed unfavorable to culture of literary tastes, was often cited† during his lifetime to stimulate youth and laboring men to form the habit of reading, and whose name is now inseparably associated with several literary institutions established or enriched by his benefactions, was born at Charlestown, Mass., on the 28th of December, 1772, and died in Cambridgeport, on the 4th of November, 1856.

His father, Eleazer Dowse, was a leather dresser, and was driven with his family from Charlestown on June 17, 1775, his house being one of those destroyed by the conflagration of that day. After a short time passed at Holliston, he established himself at Sherborn, a small town in Middlesex county, the original seat of the family, and there resumed his occupation as a leather dresser. At the age of six, Thomas was severely injured by a fall from a tree; and a rheumatic fever setting in before he had recovered from the effects of this accident, a lameness resulted which continued, with frequent attacks of severe pain, through life. At the proper age, Thomas began to work with his father, at his trade on the farm; forming at the same time a taste for reading, which he indulged with so much eagerness that, by the age of eighteen, he had read all the books he could procure in Sherborn. All his little earnings were expended in the purchase of books. He had no education but what could be obtained at the town school. He continued to live at home as an apprentice to his father till he had attained his majority. He was then seized with a desire to visit foreign countries. A neighbor of his father's, who commanded a vessel that traded from Norfolk in Virginia to London, offered him a free passage; he was, however, to reach Norfolk at his own expense. Too poor to accompany the captain by land, he engaged a passage in a coasting vessel from Boston. Head winds prevented the departure of the coaster till the vessel had sailed from Norfolk, and thus Thomas Dowse lost the opportunity of visiting

\* Abridged from a Discourse, by Hon. Edward Everett, at the opening of the Dowse Institute in Cambridgeport, and before the Massachusetts Historical Society.

† See Note at the close of this Memoir.

foreign countries. Another never presented itself. He immediately sought employment in the business in which he had been brought up, and entered the service of Mr. Wait, a leather dresser and wool puller at Roxbury, Mass., at \$12 a month wages. His pay was afterwards raised to \$25. He remained in this employ ten years. He once informed a friend that at the age of twenty-eight his highest income was \$25 a month; that he had never paid \$5 for conveyance from one place to another, never owned a pair of boots, and was then the possessor of several hundred volumes of good books well bound. In 1803, he set up in business at Cambridgeport, with the assistance of Mr. Wait, who advanced the capital and shared the profits. This partnership was dissolved at the end of the year; after which Mr. Dowse carried on the business of a leather dresser, wool puller, and glover, at first with a succession of partners, and afterwards alone, till he was far advanced in life. His business was successful, and the articles manufactured by him enjoyed the reputation of being the best of their kind in the market. In 1814, he erected a large and commodious dwelling-house and shop in Cambridgeport, and laid out two or three acres as a garden; and here he lived unmarried the rest of his days. From the earliest period he devoted a large part of his income to the purchase of books. The working hours of the day were devoted to his shop or business connected with it; but the early morning and the evening hours were employed in reading. He thus acquired an intelligent knowledge of the contents of his steadily increasing library. Having formed a taste, not only for good books but for handsome editions, in which the American press was then greatly deficient, he was accustomed to import them directly from London. About the year 1820, his agent in England sent him the prospectus of a lottery for the disposal of the sets of a costly collection of engravings of the most famous works of the old masters, and of the water-color copies made from the originals, for the purposes of this publication. Mr. Dowse bought three tickets in this lottery, and drew two prizes, one prize consisting of two sets of the engravings, colored and uncolored; the other prize being half of the water-color copies framed, fifty-two in number. He thus became possessed of a large collection of admirable copies of some of the most celebrated paintings in England. In the judgment of Mr. Washington Allston, it afforded ampler means for the study of art than were elsewhere to be found at that time in the United States. The paintings were advantageously arranged in rooms adjoining Mr. Dowse's library, and formed with it an attraction of steadily increasing interest to men of letters and taste resident in the neighborhood, and to strangers. Mr.

Dowse's bodily infirmity unfitted him for much active intercourse with society, and his disposition naturally inclined him to retirement and solitary occupation. He abstained from public life in all its forms, and though a diligent reader, committed nothing to writing. He continued to work at his trade till after he was seventy years of age; but for the last ten years of his life, though his shop remained open in the lower story of his dwelling, the business was conducted by persons in his employ. Of the eminent men whom the country has produced, Franklin was one of the special objects of Mr. Dowse's admiration. Toward the close of his life he expressed this sentiment by the erection, at his own expense, of a substantial granite obelisk at Mount Auburn, by the side of his own tomb. With the exception of the statue of Franklin presented by Mr. Bingham to the public library at Philadelphia, and the urn in Franklin place, Boston, which is rather an ornamental than a commemorative work, the obelisk erected by Mr. Dowse is believed to have been the first monument dedicated to the memory of Franklin in the United States.

Giving his hours of labor to his trade, and those of relaxation to his books, his pictures, and his garden, Mr. Dowse lived on to a serene, contented, unassuming and venerable age; exhibiting a beautiful example of the triumph of a calm and resolute spirit over what are usually regarded as the most adverse outward circumstances.

A supposed invincible necessity of our natures has, in our modern society, almost separated the mechanical from the intellectual pursuits. A life of manual labor and business cares has usually been found (less perhaps in our country than in most others) to be inconsistent with the cultivation of a taste for literature and art. It is generally taken for granted, that, for this purpose, means and leisure are required, not within the reach of those who live by the labor of the hands. Hence society, speaking in general terms, is divided into two classes—one engrossed with manual labor or business cares, and suffering for want of a due culture of the mental powers; the other employed in pursuits that task the intellect, without calling into play the wonderful faculties of our material frames. The result in too many cases gives us labor without refinement, and learning without physical development. Such was evidently not the design of our nature. Curiously, wondrously compounded of soul and body, it was meant to admit the harmonious and sympathetic development of the material and intellectual principle: rather let me say, its attainable highest excellence can exist only when such development takes place. It is quite evident, that, as far as that object is attainable, labor should be ennobled and adorned by the cultivation of intellectual tastes and the

enjoyment of intellectual pleasures; while those whose leading pursuits are of a literary or scientific character ought to inure themselves to exercises, occupations, and sports, which strengthen the frame, brace the muscles, quicken the senses, and call into action the latent powers of our physical nature.

It has ever appeared to me that Mr. Dowse's life and career were replete with instruction in this respect; in which, indeed, he is entitled to be regarded as a representative man. Few persons, as we have seen, above the dead level of absolute penury, start in life with such slender advantages of position and outfit. He inherits no fortune, he enjoys no advantages of education. From the age of six years, he labors under a serious physical infirmity. The occupation he has chosen furnishes no facilities for the cultivation of the mind over most other mechanical trades; and, till he has advanced to the age of fifty, nothing that can be called a piece of "good luck" occurs to give an impulse to his feelings. But, under these certainly not propitious circumstances, he forms a taste for books and for art such as is usually displayed only by persons of prosperous fortune; and he provides himself, by the labor of his hands, with ampler means for gratifying those tastes than are often employed by the affluent and the liberal. If his example proves the important and salutary truth, that there is no incompatibility between manual labor and intellectual culture, the rarity of the example shows with equal plainness how firm was the purpose, how resolute the will, which enabled him to overcome the difficulties of such a course. We can fancy the unspoken reflections that may sometimes have passed through his mind as he leaned over his work-bench. We can imagine, that in his hours of solitary labor, and at the commencement of his career, he sometimes said to himself, "These halting limbs and this enfeebled frame shall not gain the mastery. If I can not move with vigor in the active and busy world, much more shall these hard-working hands provide me the means of mental improvement. Poverty is my inheritance: I know from the cradle the taste of her bitter but wholesome cup; but I will earn for myself the advantages which fortune sometimes in vain showers on her favorites. A resolute purpose shall be my patrimony; a frugal life, my great revenue. Mean may be the occupation, hard and steady the toil; but they shall not break nor bend my spirit. It has not been given me to pass the happy days of emulous youth in the abodes of learning, or to sit at the feet of the masters of science and literature; but, if Providence has denied me that privilege which most I should have coveted, it has granted me a love of letters not always brought from academic halls. The wise of every country and



age shall teach me from the shelves of my library; the gray dawn and the midnight lamp shall bear witness to my diligence; at the feet of the great masters I will educate myself."

Of the religious opinions of Mr. Dowse I have no personal knowledge. I have reason to believe, from reliable information, that he cherished a profound traditional respect for the Christian Revelation; and that, having pursued a course of manly inquiry, he had settled down upon a rational faith in those prominent doctrines which unite the assent of most professing Christians. He admired the Liturgy of the church of England; and it was in presumed conformity with his wishes in this respect, that the solemn and affecting service for the burial of the dead was performed at the door of his tomb, amid the falling leaves of November.

He had constantly on his table, during the latter months of his life, a copy of the Liturgy compiled a few years since, by Hon. David Sears, from the liturgies of the leading branches of the Christian church; a truly significant expression of that yearning for union, which is cherished, as I think, by sincere and earnest men throughout Christendom. I am inclined to the opinion, that, without dogmatizing, he leaned to the ancient formularies of belief, as they were received by the liberal clergy of the last quarter of the eighteenth century and the first quarter of the nineteenth; not following opinion to the extremes to which it has more recently been carried. I believe that he felt devoutly, speculated modestly and sparingly, and aimed to give proof of Christian principles by Christian word and deed; covering up the deep things of religion in a thick-woven veil, of which awe of the Infinite was the warp, humility the woof, love the bright tincture; and which was spangled all over with the golden works of justice and mercy. The queen of New England's rivers flows clear and strong through her fertile meadows; the vaporous mists of morning hang over her path: but the golden wealth of autumn loads her banks and attests her presence. In like manner, the stream of practical piety flowed through the heart and conduct of our departed friend; but the fleecy clouds of silent reverence hovered over the current, and a firm and rational faith was principally manifested, not in sectarian professions, but in a chastened temper, a pure conversation, and an upright life.

As Mr. Dowse was childless, the final destination of his library was a matter of some curiosity among those acquainted with its value. A few months before his death he formed the resolution to present it to the Massachusetts Historical Society; and on July 30, 1856, the formal transfer was made. The library, however, was left

by the society in the possession of Mr. Dowse during the brief remainder of his life. It consisted of about 5,000 volumes of a miscellaneous character, generally in good, often in elegant bindings, and of the best editions. It is almost exclusively an English library, though containing translations of the principal authors in the ancient languages, and the cultivated languages of modern Europe. It is estimated to have cost Mr. Dowse \$40,000 without interest. After his death the library was deposited in the Historical Society's building, in an inner room fitted up for the purpose, and arranged in tasteful cabinets at a cost of \$3,000 advanced by his executors, in addition to a sum of \$10,000 also given by them as a permanent fund for the conservation and care of the library. Mr. Dowse in his will made provision for his relatives to the extent of \$25,000. The residue of his property, amounting to about \$40,000, was placed at the disposal of his executors, to be by them appropriated to literary, scientific, or charitable purposes. The collection of water-colors was given by them to the Boston Athenæum, where it is displayed in an apartment exclusively devoted to that purpose. Handsome donations have been made by the executors to the botanic garden of the university at Cambridge, and to other meritorious public objects in Cambridge and Boston.\* The Dowse High School has been founded by them at Sherborn, where he passed his youth and learned his trade; and the Dowse Institute established at Cambridgeport, in the immediate vicinity of his residence.

## NOTE.

The following allusion to Mr. Dowse by Mr. Everett, in a Lecture in the *Franklin Course* in Boston, in 1831, has often been cited as an encouragement to workmen to collect and study books.

I scarce know if I may venture to adduce an instance, near home, of the most praiseworthy and successful cultivation of useful knowledge on the part of an individual, without education, busily employed in mechanical industry. I have the pleasure to be acquainted, in one of the neighboring towns, with a person who was brought up to the trade of a leather dresser, and has all his life worked, and still works, at his business. He has devoted his leisure hours, and a portion of his honorable earnings, to the cultivation of useful and elegant learning. Under the same roof which covers his workshop, he has the most excellent library of

* Boston Athenæum—Gallery of Water Colors,.....	\$5,000
To Massachusetts Historical Society—Permanent Fund,.....	10,000
“ “ “ Library,.....	40,000
“ “ “ for fixtures of room,.....	3,000
City of Cambridge for Course of Lectures,.....	10,000
Massachusetts General Hospital,.....	5,000
Asylums for Aged Indigent Females,.....	5,000
Town of Sherborn for High School,.....	5,000
Harvard College for Botanic Garden,.....	2,000
Other Public Objects,.....	12,000

English books, for its size, with which I am acquainted. The books have been selected with a good judgment, which would do credit to the most accomplished scholar, and have been imported from England by himself. What is more important than having the books, their proprietor is well acquainted with their contents. Among them are several volumes of the most costly and magnificent engravings. Connected with his library is an exceedingly interesting series of paintings in water-colors—copies of the principal works of the ancient masters in England, which a fortunate accident placed in his possession—and several valuable pictures purchased by himself. The whole forms a treasure of taste and knowledge, not surpassed, if equaled, by any thing of its kind in the country.

Mr. George B. Emerson cited the example of Mr. Dowse in an Address at a School Festival in Salem in 1842.

For many years, and many times in a year, I have passed by the shop of a diligent, industrious mechanic, whom I have often seen busy at his trade, with his arms bare, hard at work. His industry and steadiness have been successful, and he has gained a competency. But he still remains wisely devoted to his trade. During the day, you may see him at his work, or chatting with his neighbors. At night, he sits down in his parlor, by his quiet fireside, and enjoys the company of his friends. And he has the most extraordinary collection of friends that any man in New England can boast of. William H. Prescott goes out from Boston, and talks with him about Ferdinand and Isabella. Washington Irving comes from New York, and tells him the story of the wars of Grenada, and the adventurous voyage of Columbus, or the Legend of Sleepy Hollow, or the tale of the Broken Heart. George Bancroft sits down with him, and points out on a map the colonies and settlements of America, their circumstances and fates, and gives him the early history of liberty. Jared Sparks comes down from Cambridge, and reads to him the letters of Washington, and makes his heart glow with the heroic deeds of that godlike man for the cause of his country. Or, if he is in the mood for poetry, his neighbor Washington Allston, the great painter, steps in and tells him a story—and nobody tells a story so well—or repeats to him lines of poetry. Bryant comes, with his sweet wood-notes, which he learnt among the green hills of Berkshire; and Richard H. Dana, father and son, come, the one to repeat grave, heart-stirring poetry; the other to speak of his *two years before the mast*. Or, if this mechanic is in a speculative mood, Prof. Hitchcock comes to talk to him of all the changes that have befallen the soil of Massachusetts, since the Flood and before; or Prof. Espy tries to show him how to predict a storm. Nor is his acquaintance confined to his own country. In his graver hours, he sends for Sir John Herschel from across the ocean; and he comes and sits down, and discourses eloquently upon the wonders of the vast creation—of all the worlds that are poured upon our sight by the glory of a starry night. Nor is it across the stormy ocean of blue waves alone that his friends come to visit him; but across the darker and wider ocean of time come the wise and the good, the eloquent and the witty, and sit down by his table, and discourse with him as long as he wishes to listen. That eloquent blind old man of Scio, with beard descending to his girdle, still blind, but still eloquent, sits down with him, and, as he sang almost three thousand years ago among the Grecian isles, sings the war of Troy or the wanderings of the sage Ulysses. The poet of the human heart comes from the banks of Avon, and the poet of Paradise from his small garden-house in Westminster; Burns from his cottage on the Ayr, and Scott from his dwelling by the Tweed. And any time these three years past may have been seen by his fireside a man who ought to be a hero with school-boys, for no one ever so felt for them; a man whom so many of your neighbors in Boston lately strove in vain to see—Charles Dickens. In the midst of such friends, our friend the leather dresser lives a happy and respected life; not less respected, and far more happy, than if an uneasy ambition had made him a representative in Congress, or a governor of a state; and the more respected and happy that he disdains not to labor daily in his honorable calling.

My young friends, this is no fancy sketch. Many who hear me, know, as well as I do, THOMAS DOWSE, the leather dresser of Cambridgeport; and many have seen his choice and beautiful library.

## MONUMENT TO FRANKLIN.

Toward the close of his life, and when no selfish end could be promoted by the unavoidable notoriety of the act, Mr. Dowse stepped out of the charmed circle of his diffidence to make a very significant public demonstration of his interior sentiment; not by the methods which most win the gratitude of society, or, what is often mistaken for it, the applause of public bodies; not by donations to public institutions or fashionable charities; but by a most expressive tribute of respect to the honored, the irresponsible dead. Franklin had always been one of his chief favorites among the great men of America. The example of the poor apprentice, of the hard-working journeyman printer, who rose to the heights of usefulness and fame, and often cheered the humble leather dresser, as it has thousands of others similarly situated, in the solitary and friendless outset of his own career. The teachings of the philosopher of common sense had found a clear echo in his practical understanding; and so, at the close of his life, he pronounced the eulogy of the great man whom he so highly honored and warmly appreciated; not in the fleeting breath of well-balanced phrases, but in monumental granite. Mr. Dowse's eulogy on Franklin was pronounced in the following inscription, placed upon the side of the obelisk, in which all the prominent points in the character of the great man to whom it is consecrated are indicated with discrimination, and nothing appropriate to the place is omitted but the name of the venerable and modest admirer, by whom this expensive and abiding tribute of respect was paid:—

TO THE MEMORY  
OF  
BENJAMIN FRANKLIN  
THE PRINTER  
THE PHILOSOPHER  
THE STATESMAN  
THE PATRIOT  
WHO  
BY HIS WISDOM  
BLESSED HIS COUNTRY AND HIS AGE  
AND  
BEQUEATHED TO THE WORLD  
AN ILLUSTRIOUS EXAMPLE  
OF  
INDUSTRY  
INTEGRITY  
AND  
SELF-CULTURE  
BORN IN BOSTON MDCCVI  
DIED IN PHILADELPHIA MDCCC

The manner in which Mr. Dowse proceeded in the erection of a monument to Franklin was as remarkable as the act itself. It was eminently characteristic of the man. He raised no committee; levied no contributions on the weary circle of impatient subscribers, who murmur while they give; summoned no crowd to witness the laying of the corner-stone; but, in the solitude of his library, projected, carried on, completed, and paid for the work. With the exception of the urn in Franklin Place—a matter of ornament rather than commemoration—the first monument raised to the immortal printer, philosopher, and statesman—one of the brightest names of his age—was erected by the leather dresser of Cambridgeport.

LIBRARY OF THOMAS DOWSE  
THE DOWSE LIBRARY.

A short time before his death, Mr. Dowse caused a few copies of a catalogue of his library to be printed for private distribution. It is contained in an octavo volume of two hundred and fourteen pages. The number of works entered in the catalogue is two thousand and eight, and the estimated number of volumes is not less than five thousand; all decently, many elegantly, a few magnificently, bound. They are, for the most part, of choice editions, where a choice of editions exists. A fair proportion of them are specimens of beautiful typography; a few of them works of bibliographical luxury and splendor. It is an English library. Mr. Dowse was not acquainted with the ancient or foreign languages; and as it was formed not for ostentation, but use, it contained but a few volumes not in the English tongue. In running over the catalogue cursorily for this purpose, I find nothing in the Greek language, and but a single work in Latin, and that not an ancient author,—a volume of De Bry's collection of voyages; and nothing in any foreign languages but the works of the three great masters of sacred oratory in French—Bossuet, Bourdaloue, Massillon; in all, seventy-two volumes. These, with the addition of the voyage of Father Marquette, who, first of civilized men, descended the Mississippi, from its junction with the Wisconsin to the Arkansas, were the only books in a foreign language contained in Mr. Dowse's library—the last being a present.

But, though he confined his library almost exclusively to the English language, it was enriched with the best translations of nearly all the classical writers of Greece and of Rome, as well as of several of the standard authors of the principal modern tongues. Thus his shelves contained translations of Homer, Hesiod, the minor lyric and elegiac poets, Pindar, Theocritus, Æschylus, Sophocles, Euripides and Aristophanes, Plato and Aristotle, Philostratus, Epictetus, Marcus Antoninus, Demosthenes, Herodotus, Thucydides, Xenophon, Arrian, Diodorus Siculus, Dionysius of Halicarnassus, Polybius, Plutarch, Pausanias, Dio Chrysostom, Longinus, Aristænetus, Anacreon, Lucian, Porphyry, and the Emperor Julian. From the Latin he had translations of Lucretius, Virgil, Ovid, Horace, Catullus, Tibullus, Lucan, Claudian, Juvenal, Persius, Plautus, Terence, Caesar, Sallust, Livius, Tacitus, Suetonius, Justin, Cicero, Quintilian, Seneca, Pliny the Younger, and Apuleius. Among German writers he had translations of the principal works of Klopstock, Wieland, Goethe, Schiller, of Norden, Niebuhr, father and son, Johannes von Müller, Heeren, Otto Müller, Raumer, Ranke, Mendelssohn, Kant, the two Schlegels, Menzel, Heinrich Heine, and Weber. From the Italian language he had translations of Dante, Petrarch, Boecaccio, Ariosto, Tasso, Guarini, Marco Polo, Machiavelli, the Memorials of Columbus, Guicciardini, Clavigero, Botta, Lanzi, and Metastasio. Of French authors he had translations of the old Fabliaux, De Comines, Froissart, Monstrelet, Rabelais, Montaigne, Pascal, De Retz, De la Rochefoucault, Fénelon, Racine, Lafontaine, Molière, Madame de Sévigné, Boileau, De la Salle, La Fontaine, Bayle, Rollin, Montesquieu, Bossu, Charlevoix, Voltaire, Rousseau, Grimm, Vertot, the Abbé Raynal, St. Pierre, De Vaillant, Volney, Brissot de Warville, De Chastellux, Marmontel, Barthelemy, Necker, Madame de Staël, Madame Roland, Mirabeau, Chénier, Chateaubriand, La Roche Jacquelein, Baron Humboldt, Sismondi, Guizot, De Tocqueville, Lamartine, and Béranger. In Spanish and Portuguese he had Cervantes, Cortez, Gomara, Bernal Diaz, Las Casas, De Soto,

De Solis, Garcilasso de la Vega, Herrera, Mariana, Molina, Quevedo, Ulloa, Cabrera, Alcedo, and Camoens. It is scarcely necessary to add to this, I fear, tedious recital of names, that it was evidently Mr. Dowse's intention, as far as it could be effected through the medium of translations, that his shelves should not only contain the works of the master-minds of every language and age, but also a fair representation of the general literature of the ancient and modern tongues.

But it was, of course, upon his own language that he expended his strength; for here he was able to drink at the fountains. Putting aside purely scientific, professional, and technical treatises—in which, however, the library is not wholly deficient—it may be said to contain, with a few exceptions, the works of nearly every standard English and American author, with a copious supply of illustrative and miscellaneous literature, brought down to within a few years of his death, when, under the growing infirmities of age, he ceased to add to his collection. No one department appears to predominate; and it would be impossible to gather, from the choice of his books, that his taste had even strongly inclined to any one branch of reading beyond all others. He possessed the poets and the dramatists, from the earliest period to the present day (more than three pages and a half of the printed catalogue are devoted to Shakspeare and his commentators; a fine series of the chroniclers; the historians and biographers; the writers and collectors of voyages and travels, among which is the beautiful set of Purchas's Pilgrims, one volume of which was selected as the earnest volume of the donation of his library to the Historical Society; the philosophers, theologians, moralists, essayists; and an ample choice of miscellaneous writers. To enumerate the most important of them would be simply to repeat the prominent names in the literature of the English language. Though not aiming in any degree at the acquisition of books whose principal value consists in their rarity, Mr. Dowse was not without fondness for bibliographical curiosities. His collection contains a considerable number of curious works seldom found on this side of the Atlantic, and among them a magnificent large paper-copy of Diddin's bibliographical publications. Though somewhat reserved in speaking of his books, and generally contented with simply calling a friend's attention to a curious volume, he sometimes added, in a low voice, "A rare book."

When the works of authors, falling within his range, had been collected in a uniform edition, he was generally provided with it. There is not much of science, abstract or applied; though that expression may seem ill chosen, when I add that it contains translations of Newton's "Principia" and Laplace's "System of the World." There is but little of jurisprudence in any department; but Grotius and Vattel, and one of the critical editions of Blackstone, show that neither the public nor municipal law had been wholly overlooked by him. In American books the library is rather deficient. It contains President John Adams' "Defence of the American Constitutions;" but no work on the Constitution of the United States, and but very few having any bearing upon political questions. There are the works of Hamilton, whom Mr. Dowse greatly respected; of Fisher Ames; Jefferson's "Notes on Virginia;" and the little volume entitled the "Political Legacies of Washington;" but with these exceptions, and that of the works of Franklin, whom he held in especial honor, Mr. Dowse's library contains the writings of no one of the Presidents of the United States, nor of any one of our distinguished statesmen. It is well supplied in the department of American



history, and in that branch contains some works of great rarity and value. Of congressional documents, I think there is not one on the catalogue!

That it wants many books not less valuable than many which it contains, is no doubt true. Nothing else was possible, in a collection of five thousand volumes. Had it been fifty or five hundred thousand, the case would have been the same. It is to be remembered also, that he formed his library not in a mass, and on the principle of embracing at once all the books belonging to any particular department. He sent for the books which he wanted; for the books which were offered in sale catalogues at acceptable prices; for the books which fell in with his line of thought at the time; reserving to future opportunities to supply deficiencies, and make departments more complete. It must be recollected, too, that though his business prospered, and yielded what, under the circumstances of the case, might be deemed an ample income, he never had at command the means for extravagant purchases. Nothing would be more inconsiderate than to compare his library with the great foreign private libraries—Mr. Grenville's or Lord Spencer's in England, or Mr. Lenox's in this country, on which princely fortunes have been expended; although, if estimated in proportion to his means, his modest collection would not suffer in the contrast. "When I was twenty-eight years of age," Mr. Dowse remarked to Mr. Ticknor, "I never had any means but the wages of a journeyman leather dresser, at twenty-five dollars per month; I had never paid five dollars for conveyance from one place to another; I never had worn a pair of boots; and I was at that time in the possession of several hundred good books, well bound."

For a long course of years, he seems to have contemplated no other destination for his books than that which awaits the majority of libraries at home and abroad—that of coming to the hammer on the decease of their proprietors. Happily for us—and, may I not add, happily for him while he yet lived?—happily for his memory, he conceived the noble idea of bestowing it, while he lived, on a public institution. By an act of calm self-possession rarely witnessed so near the falling of the curtain, he called you, sir (Hon. Robert C. Winthrop,) with our worthy associate, Mr. Livermore, to his presence, as the representatives of our society; and divesting himself in our favor of what had been his most valued property—the occupation of his time, the ornament of his existence—in which he had lived his life and breathed his soul, transferred it to the Massachusetts Historical Society.

You, gentlemen of the Historical Society, appreciated the value, you felt the importance, of the gift of his library, and received it as a sacred trust. You have consecrated to it an apartment, I may venture to say, not unworthy a collection so curious in its history, so precious in its contents—an inner room in your substantial granite building, approached through your own interesting gallery of portraits and extremely important historical library, looking out from its windows on the hallowed ground where the pious fathers of Boston and Massachusetts rest in peace. There, appropriately arranged in convenient and tasteful cabinets at the expense of his executors, and by their liberality, wisely interpreting and carrying out the munificent intentions of the donor, endowed with a fund which will insure that permanent supervision and care, without which the best library soon falls into decay, it will remain to the end of time, a *μνημα* as well as a *σπήλαιον*—a noble monument, more durable, more significant, than marble or brass—to his pure and honored memory. There, with the sacred repose of death beneath the windows,

and the living repose of canonized wisdom around the walls, the well-chosen volumes—the solace for a long life of his own lonely, but, through them, not cheerless hours—will attract, amuse, inform, and instruct successive generations. There his benignant countenance—admirably portrayed by the skillful artist, at the request of the society, in the last weeks of his life—will continue to smile upon the visitor that genial welcome, which, while he lived, ever made the coveted access to his library doubly delightful. There the silent and self-distrusting man, speaking by the lips of all the wise and famous of our language; assembled by his taste and judgment on the shelves, will hold converse with studious and thoughtful readers, as long as the ear drinks in the music of the mighty masters of the English tongue—as long as the mind shall hunger, with an appetite which grows with indulgence, for the intellectual food which never satisfies and never cloy.

Of this library, his neighbor, friend and executor, George Livermore, Esq., remarks:—

"Perhaps there never was a library of the same size, where the books were more closely identified with the collector. His library was to him more than a collection of rare and costly intellectual treasures. Each volume possessed some special interest; for it was at first bought and read because the author or his work pleased him, or because it either directly or indirectly illustrated some theory, principle, or object, in which he felt interested. A book, once admitted to a place upon his shelves, became to him a constant companion and a personal friend. Indeed, through the greater part of his long life, his chief converse was with these silent teachers, these gentle guides. He enjoyed, it is true, the visits of persons of cultivated intellectual and refined taste from his own neighborhood or from a distance; but these visits were short, if not infrequent, and afforded little opportunity for any thing more than passing remarks respecting authors and editions.

"Though Mr. Dowse lived so much by himself, he should not be considered a solitary man. In his early life, he could have truly adopted the language of Channing: 'No matter how poor I am. No matter though the prosperous of my own time will not enter my obscure dwelling. If the sacred writers will enter, and take up their abode under my roof; if Milton will cross my threshold to sing to me of Paradise; and Shakspeare, to open to me the worlds of imagination and the workings of the human heart; and Franklin, to enrich me with his practical wisdom—I shall not pine for want of intellectual companionship; and I may become a cultivated man, though excluded from what is called the best society in the place where I live.' This glorious companionship he had; and it fully sufficed him when his 'dwelling' was no longer 'obscure,' and when he would have been welcomed and honored in any society of cultivated minds."



## II. METHODS OF INSTRUCTION.

BY REV. WILLIAM ROSS.

### I. THE CATECHETICAL METHOD.

1. The adjective *catechetical* is derived from the Greek. The verb *κατηχηω*, from which it is formed, is said to be used in the earlier Greek writers in the sense of "to resound or make a pleasant noise," &c., but in the later Greek writers and in the Fathers it signifies "to instruct in first principles—especially the first principles of religion." The verb occurs several times in the New Testament—for instance, in Luke, i. 4; Acts, xviii. 25, xxi. 21, 24; Rom. ii. 18; 1 Cor. xiv. 19; Gal. vi. 6;—and is translated according to the context, "to instruct," "to inform," "to teach."

2. The catechetical method, as we employ the phrase, is the method of teaching by questioning. Yet all questioning does not come under this head. Questions may be asked for the purpose of proving whether what has been previously learned has been rightly understood and is remembered by the pupil. This is examination, not catechisation. Catechetical questioning implies teaching—examinatory questioning, merely testing or proving. In practice they readily blend, but it is better to consider them separately.

3. In employing this method, the teacher should previously decide in his own mind the track that he intends to pursue in imparting his information; and this will necessarily differ according to circumstances. A few general remarks are therefore all that can be here offered on the subject.

4. The first class of questions may have reference to the meanings of the words singly.

All language is more or less figurative, and words frequently make a more vivid and lasting impression upon us when we know their precise literal meaning as well as their ordinary signification. But the extent to which this analysis ought to be carried must, of course, depend upon the age and general attainments of the scholars, &c., &c.

5. The second class of questions may refer to the expressions employed, that is, the words taken in the relation which they bear to one another—their syntactical relations.

Peculiar collocations of words or idioms are to be found in every

language, and they abound in the English language, in which it not unfrequently happens, that we have to employ three or four words to convey an idea which in other languages may be expressed by a single word.\*

6. The third class of questions may aim at eliciting the facts or doctrines taught in the subject, with their relations and bearings to collateral facts or doctrines.

7. In the fourth class of questions, an endeavor may be made to elicit the inferences which ought to be drawn from the full consideration of the subject—or in other words, the lesson that it teaches, or what may be called the application of the instruction.

8. If the questions are of an examinatory kind, they may be put with great rapidity, but if of a catechetical kind, more time may intervene, yet not so long as to allow the catechumens to get into a state of quiescent sluggishness.

9. One general rule for the conducting of the catechetical process, is to *tell as little as possible*. It is always better to elicit the information by subordinate questions, where it can be done, than to tell the pupils in a direct form.†

10. In teaching by the catechetical method, one should by all means avoid long intervening explanations, or, as they are sometimes called, preachments.

11. In his questioning the teacher ought to endeavor, by a kind of mental substitution, to place himself, as it were, in the condition of his scholars as it regards their knowledge of the subject in hand. But in doing this, he ought not of course to descend to the incorrect language or manners of his scholars, but gradually lead them to imitate himself in these respects.

12. A monotony of voice in questioning ought to be avoided.

\* Suppose the words perfectly understood, the teacher ought, in general, to translate the information out of the technical language in which it may happen to be invested, into his own ordinary language, or that of the pupils to whom he may wish to convey the information.

This is necessary in order that the subject may come entirely home to them, and that their minds may properly assimilate it. For our language is by usage fixed for us, and we can not alter it; and into that common language in which we think and feel, all truth must be translated, if we would *think and feel* respecting it, at once rightly, clearly, and vividly. See Dr. Arnold's Discourses.

† The desirable point is, to insinuate your information into their minds, so that by indirect and tortuous entrance it may be caught and entangled with what is already there, and not slip out again, as it would through a direct passage.

The main point is, so to shape and order your questions as never to be reduced to tell them any thing in the way, and that the last answer should give the conclusion full and convincing.

This evidently requires much patient practice on the part of the teacher, and some acquisitions also. He must have gauged the capacity of the minds of children, obtained an insight into their working, so that he may know where and how to press with his questions.—*Evans*.

Whatever pitch of voice be adopted, if a monotone be persisted in, its effect is to beget weariness—and in children perhaps sooner than in grown persons.

13. On the other hand, a suitable variety of inflection in the voice tends powerfully to awaken and preserve the attention, to deepen impressions, and to lead the pupils themselves to employ correct and appropriate modes of expression.

14. The catechetical lesson that attains its object in a satisfactory way by the shortest course, is the best. Questions that lead too far from the principal point of the lesson ought therefore to be avoided.

If the teacher perceive that the course he intended to pursue is likely, from some unforeseen cause, to lead him too far from the object of the lesson, he may change that course; yet the necessity for making such a change should if possible be avoided, as it generally mars more or less the effectiveness of the lesson.

15. In general, the question ought not to be put to each scholar seriatim, but to the whole division or class. By this means the attention of all is kept on the stretch. In general, too, the answer ought to be given by an individual pupil, and not by the whole division or class simultaneously. Too many questions ought not to be asked immediately after one another of the same pupil; and each ought to answer only a fair proportion of the whole. Each scholar, whenever it can be done, ought to be called upon to answer *some* questions in every lesson. Where the attainments of the division or class vary considerably, the questions may be so framed and so addressed as in some measure to meet this variety. The pupil that is required to answer ought to be addressed by name, or otherwise made to know so certainly that he is appealed to, as to prevent a misunderstanding on this point.

In the catechetical method there are two principal elements that claim our attention—the *question* and the *answer*.

*The Question ought not to be above the Pupils' Comprehension.*

1. In *language*.
2. It ought not to be above it in *sense*.
3. It ought not to be *too complex*, that is, include in it so many particulars as to bewilder. The obvious remedy for this is to break up the question into a number of smaller ones.
4. The question ought not to require a longer answer than the pupils can properly express in language. On the other hand—
5. It ought not to be frequently so formed as to admit of the monosyllabic answer *yes* or *no*. Such questions do not sufficiently exercise the minds of the pupils.

6. The question ought not to be put too frequently in the same form of words.

Uniformity long continued creates mental weariness in all persons, and will of course do so sooner in the case of children than in persons of mature mind. For when the speaker ceases to be interesting, grown persons may cease to attend to him; and by turning their thoughts inward, they possess in reflection a much larger store of entertainment than young children.

But in addition to this, the teacher by using correct and varied language leads his pupils insensibly to imitate him in this respect; and so to acquire the valuable habit of correct mental composition—a point which ought not to be overlooked even in our most elementary schools. The learning of grammar rules will not of itself accomplish this. Practice is necessary, and no school-exercise affords a better field for this practice than the catechetical method.

7. The question ought to be pointed and definite—not *vague*, *ambiguous*, or *obscure*.

8. It ought in general to admit but of *one correct answer*.

9. The question ought to depend as to its *kind* upon the character of the preceding answer.

10. The question in general ought to bear the same relation to the preceding and subsequent questions, *that one link of a chain bears to the links adjacent to it*.

11. The question ought in general to be *short*.

The attainments of the pupils must partly decide the latitude to be allowed in this respect.

12. The question ought to contain *no superfluous words*. It is possible by multiplying words to increase obscurity—and every unnecessary word in a question put to children is not only useless, it is injurious; if it does no good, it is sure to do harm.

13. The question ought not to end frequently in the word *what*?

14. Need we say that it ought to be grammatically correct?

*The Answer.*

1. The question either is or is not answered. In the latter case, the first thing the teacher ought to do is not to say, "How stupid you are!" but to consider whether the cause of the failure rests with himself or with the pupils. If he observes not carelessness and evident inattention on the part of the pupils, let him always look to himself first for the cause of the failure.

2. Perhaps he has put the question in a too difficult, too obscure, or too ambiguous form, and has at the same time asked it in a harsh, unsympathizing, repulsive, or intimidating manner, &c., &c. If any

such faults exist on the part of the teacher, they must of course be corrected.

3. If the pupils do not answer, it is either because they can not or will not. In the latter case, their silence may originate in *sullenness; ill-temper, spite, or bravado*. Against that spirit of which these are manifestations—should it ever in any measure show itself—the teacher must strenuously set his face.

Or it may originate in *timidity, fear of answering wrongly, bashfulness, &c., &c.*—which hindrances are to be got over by a kind and encouraging manner.

The pupils' inability to answer may also originate in their inattention, or their want of sufficient command of language properly to express themselves, &c., &c. The remedies for these causes of failure are obvious.

4. The answer when given is either *right* or *wrong*. It is right when it is correct as it respects fact; that is, *answers* to the question, and is properly expressed; and it is wrong when it is deficient in either of these respects.

5. The answer may be either wholly wrong, that is, *false*, or only partly wrong, that is, *faulty*.

If the question has been properly asked, and a false answer is returned, the fault lies with the pupils.

6. They may answer wrongly from playfulness, carelessness, inattention, or absence of mind—their thoughts may be at the ends of the earth, &c., or they may not have fully heard, or rightly understood, the question.

In the latter cases, the remedy is the repetition of the question in a perfectly distinct and audible tone of voice, and in a form that admits not of being misunderstood.

7. Or the answer may be false because the pupils really entertain false ideas respecting the matter to which the question relates. In which case it is of course the teacher's business forthwith to correct carefully and thoroughly such false notions.

8. The answer may be only partly wrong or faulty. With respect to the *matter* of the answer; this is the case when the pupil answers more than the teacher desired—or when he does not answer the question actually asked, but passing over the intermediate steps, gives an answer to a question to which he perceives the present question points—that is, he anticipates the teacher in his process. This only happens in the case of children of quick parts. The teacher can not greatly blame such pupils, yet for the sake of those of weaker capacities the practice must be checked; and if the for-

ward are allowed to answer, they must give only the precise answer which each question requires.

9. An answer may also be false with respect to its matter, when it is obscurely or indefinitely expressed—when it gives the genus instead of the species, or the species instead of the individual—or when the answer is only a part of what the question required.

10. The teacher ought not sternly to check or discourage such attempts on the part of the pupils—provided they proceed from an evident desire to learn, and to do their best. He ought rather to seem pleased with such answers, and gently lead the pupils by additional questions to correct their inaccuracies.

11. An answer may be partly wrong as respects its *form*, by containing grammatical mistakes. These the teacher will either correct himself, or allow some of the more advanced pupils to correct them. Such mistakes are perhaps never intentionally made, and the pupil that commits them ought not, therefore, to be laughed at.

12. The answer is faulty in form when it is not given in that part of speech or form of sentence which the question requires; when, for instance, a verb is given instead of a noun, a word instead of a sentence, &c., &c. A simple repetition of the question in such cases will generally lead the pupils to detect and correct such faulty expressions.

13. An answer may also be regarded as faulty with respect to form, when it is unintelligible on account of being mutteringly or indistinctly spoken. Such answers, when they do occur, should never be passed over. Distinct speaking, both on the part of the teacher and the pupils, is a matter of so vital importance that throughout the entire business of instruction too much stress can not be laid upon it.

14. The answer may also be faulty by being irrelevant to the question. It may contain in it something absurd or ridiculous—or it may be given in improper or vulgar language. But such answers will not often occur, and will, perhaps, never be given intentionally in a well-ordered school.

15. The treatment of such offenders must depend entirely upon the *spirit* in which the offense is committed. We content ourselves, therefore, by merely observing that *guessing*, *random*, and *foolish* answers should be vigorously discountenanced. Such answering is injurious to the pupil himself, often disrespectful to the teacher, and always a nuisance and hindrance to the class or division in which it occurs.

*Counsels and Cautions Respecting the Employment of the Catechetical Method.*

1. The teacher should never tell the first letter, first syllable, first word, or first part of the answer. This only gives rise to thoughtless guessing—senseless or ridiculous answers.

2. The teacher ought not capriciously to require the pupil to give the answer in the precise words that he (the teacher) may himself have thought of, and in his own mind prescribed, as it were, for the question. This only occasions loss of time, and needlessly discourages and dampens the ardor of the pupil, who may, in his own mind, feel convinced that he answered correctly, though perhaps not precisely in the words which the teacher wished to have.

3. The teacher need not repeat every correct answer. This ought to be avoided because, as in the former case, it is a waste of time and also renders the lesson too easy.

Such repetition is only allowable when the pupils are either very young or of slender capacities. Children of ordinary parts can, with proper attention, readily follow a well-arranged and well-conducted catechetical lesson. The teacher ought, however, to repeat, and cause to be repeated, the more difficult answers and the chief points in the lesson.

4. The teacher ought to take care that he does not contract the habit of accompanying every correct answer by a mark of approbation expressed in some stereotyped phrase—such as, “very well,” “very good,” “quite right,” “that’s a good boy,” “that’s a good girl,” &c., &c. The teacher can by his manner at once show whether the answer be correct or not. Such ever-recurring repetition is therefore a mere loss of time. It may, too, have an injurious influence on the pupils. They are likely either to expect to be praised on every occasion, or else, from its being bestowed so indiscriminately, to attach no value whatever to it. In the latter case, when an instance does occur in which approbation may be really merited, and ought to be bestowed, the teacher, by this bad habit, has deprived himself, in a great measure, of the power of giving such praise. The teacher’s marked approbation ought therefore only to be bestowed on proper occasions—as, for instance, when a question of more than ordinary difficulty has been answered, or when an answer has been given evincing great attention and thoughtfulness, &c.

5. The teacher should never allow any other pupil to answer a question than the one who is asked. If others are prepared to answer, they may show that they are so by holding out their finger, or hand, horizontally. Confused answering, too, that is, several speaking



at one time, ought never to be allowed. In such a case, the teacher can neither judge of the correctness nor of the value of the answer. Besides this, the practice may give rise to *parrotting* repetition, which ought, by all means, to be guarded against.

6. Some think it better that the answer should never be given in a *single* word, but in the form of a proposition or sentence complete in itself. For instance, suppose the question asked—"What is the shape of the world?"—the answer would not be simply "round"—but would be given in the form of a distinct sentence, thus—"the world is round." This plan will occupy more time than the one generally in use. As an occasional variety, however, of the ordinary method, we feel sure that the time it might occupy would not be misspent.

7. The teacher may, if he think fit, allow the pupils to ask him questions or propose to him difficulties arising out of the lesson: but if such a liberty is allowed, care must be taken that it be only employed within proper limits and in a proper spirit. With due caution and control, the practice may be attended with advantage. Such questions are always sure to excite the attention of even the less thoughtful pupils. Questions that are in this way put foreign to the subject, or in an imperfect form, &c., &c., the teacher will readily know how to deal with. Any pupil that has endeavored to understand the lesson, but has not been able to do so, should always be allowed, and even encouraged, to tell his difficulties to his teacher at a proper time.

8. Mental surfeiting, whether it may be occasioned, by too long lessons, or from whatever cause it may arise, ought to be as carefully guarded against as physical surfeiting, and for the very same reasons. For they both alike injure health, destroy the appetite, and create, for the most part, a disgust and loathing for the food, mental or physical, that has been indulged in to satiety.

This caution is, of course, applicable to all methods.

9. It is better, in general, that the pupil should answer in his own words, and not in the words of the text-book—except, of course, in cases where the object is to treasure up in the memory the precise language, as well as the substance of the instruction conveyed in it.

10. The teacher ought always to previously prepare his catechetical lesson. We have heard of teachers who boasted that they never prepared their lessons; but such a boast is much too silly and vain to deserve even a passing notice—except in the way of reprehension. Under ordinary circumstances the pretense of not having prepared the lesson is no *valid* excuse for its being a bad one; and, on the



other hand, a careful preparation does not at all detract from a good lesson.

11. The teacher ought not, in giving his catechetical lessons, to use a book, that is, to have the book in his hand, or to be otherwise confined to it; and this holds equally good, even should the book be drawn up in the form of question and answer. Such teaching, if teaching it deserves to be called, is not the catechetical method. The moment that a teacher becomes confined rigidly and mechanically to his text-book, he ceases to be, in the higher sense of the term, a teacher; he is rather a task-master.

*Socratic Method Applied to Religious Instruction.*

The following observations occur in a charge delivered by Arch-deacon Bather, in 1835:—

I. The business of the catechist is to, first, *instruct* his pupils, by questioning the meaning into them, and then *examine* them, by questioning it out of them. The practice recommended has, of course, its difficulties; and the method can not be fully shown without more minute examples than can well be given in an address of this nature. I may possibly, however, explain myself in some degree.

The thing to be done is, to possess the minds of a number of ignorant and heedless children with the sense and meaning, we will say, of one of our Lord's parables, and to bring them to perceive and consider the practical lesson which it is intended to convey. In order to this, their attention must, in the first place, be gained and fixed; and then there will, probably, be words and phrases to be explained, perhaps old customs also—the literal story or similitude to be compared with the religious truth or doctrine which it is employed to illustrate, and other portions of Scripture to be cited and brought to bear on the point in hand, in a way of confirmation or further exposition.

Then there are two ways of proceeding: you may *preach or lecture* upon the subject, and in so doing you tell your hearers what you have acquired and ascertained yourselves; or else you may communicate instruction, as I advise, *by asking questions and correcting the answers*, or, I should rather say, by bringing the children themselves to correct them, by means of further questioning on your part; and in that case they tell you every thing. The catechist's method forces the child to think. Some little effort and application of mind is required of him—is actually extorted from him every moment.

Instead of making a speech, the instructor has put a question; perhaps he has got no answer, or a wrong answer; but he is not beating the air, and his pains are not thrown away. If he has but shown his pupil that something has been asked of him to which he can render no reply, at least he has arrested his attention, and probably excited his curiosity, and convinced him, moreover, of his ignorance, and made him perceive just in what place and instance he needs information; and therefore, if he has not made a proselyte, he has got a hearer, and from so small a beginning greater things are soon to follow. He has the opportunity, whilst the catechetical instruction is proceeding, of interspersing, as he gets his replies, many brief remarks and practical observations, in a natural and lively, and therefore attracting and affecting, manner; or he may sum up the particulars afterward in a short discourse, and ground upon them, with good effect, the admonitions which they obviously suggest. It would astonish an inexperienced person to see how much very young children may acquire in this way, and how much a whole school may be interested by it. They get imperceptibly a knowledge of words, and a fuller vocabulary; and so, one of the peculiar difficulties which every one will meet with who attempts to instruct the children of very ignorant parents, will be, in a great degree, overcome. Next to being asked a question ourselves, nothing awakens and interests us more than hearing others questioned; there will be curiosity to catch the child's reply; a thought can scarcely fail to cross the listener

how he should reply himself, or whether he could reply. Many are glad to get information without the risk of exposing present ignorance; and when the information is watched and waited for, it is retained.

If. The catechetical method has been called by some the Socratic method. Though this name, it is true, has also been usurped by books written in the *form* of question and answer. In the *form* they may be, but in the *spirit* of the catechetical method they can not be; and if the method of Socrates was nothing more than as it is set forth in such books, truly mankind have long worshiped falsely.

The Socratic method appears to have consisted in a judicious combination of interrogation and dialogue. Socrates it has been remarked, in reasoning with those whose judgments he wished to inform or rectify, assumed the appearance rather of an inquirer than of a disputant. He insensibly led those whom he conversed with to draw themselves the conclusions he desired, by a series of well adapted interrogatories, rather than imposed his conclusions on them by the direct force of any arguments of his own.

He rather won their conviction by gradual and unobserved approaches, in which they followed him as a friend, than forced their assent by the weight of overbearing proofs as an assailant.

He rather helped them to inform and rectify their own judgments, than appeared in the magisterial office of dictating truth or refuting falsehood.

He found them ignorant of some important truth; and instead of professing to instruct them, he sought to learn their sentiments upon some other truth, with which he knew they were acquainted, and which he knew was connected with the one he wanted to lead them to. By familiar interrogatories he conducted them, step by step, through the intermediate principles; till they were at length surprised with the perception of what they had never observed before. He found them under the influence of some dangerous error; and instead of professing to correct them, he led them on by successive questions, to discern an absurdity in which they unexpectedly found themselves landed by their own principles. And thus he avoided all that resistance to conviction, which often renders the most conclusive demonstration ineffectual to persuade.—(See the "*Socratic Dialogues*;" also Dr. Wiggers' "*Life of Socrates*."

The following, taken from the "*Apologia*," may be regarded as a brief specimen of the Socratic mode:—

"Callias," said I, "if your two sons were colts or calves, we should have chosen a trainer for them, and hired him with a fee, one who would be likely to make them excellent and useful in performing their proper duties; now this man would be one of those skilled in horses or agriculture; but now, since they are men, what master are you thinking of choosing for them?" The answer is obvious, viz:—"A trainer fully skilled in such excellence as suits a man and a citizen."

III. Dr. Watts, in speaking of the Socratic method of teaching, observes:—This method of dispute derives its name from Socrates, by whom it was practiced, and by other philosophers in his age, long before Aristotle invented the particular forms of syllogism in mood and figure which are now used in scholastic disputations.

The Socratical way is managed by questions and answers, in such a manner as this, viz:—If I would lead a person into the belief of a heaven or hell, or a future state of rewards and punishments, I might begin in some such manner of inquiry, and suppose the most obvious and easy answers:—

Q. Does God govern the world?

A. Surely he that made it governs it.

Q. Is not God both a good and righteous governor?

A. Both these characters doubtless belong to him.

Q. What is the true notion of a good and righteous governor?

A. That he punishes the wicked and rewards the good.

Q. Are the good always rewarded in this life?

A. No, surely; for many virtuous men are miserable here, and greatly afflicted.

Q. Are the wicked always punished in this life?

A. No, certainly; for many of them live without sorrow, and some of the vilest of men are often raised to great riches and honor.

Q. Wherein, then, doth God make it appear that he is good and righteous?

A. I own there is but little appearance of it on earth.

Q. Will there not be a time, then, when the tables shall be turned, and the scene of things changed, since God governs mankind righteously?

A. Doubtless, there must be a proper time wherein God will make that goodness and that righteousness to appear.

Q. If this be not before their death, how can it be done?

A. I can think of no other way but by supposing man to have some existence after this life.

Q. Are you not convinced, then, that there must be a state of reward and punishment after death?

A. Yes, surely; I now see plainly that the goodness and righteousness of God, as governor of the world, necessarily require it.

Now the advantages of this method are very considerable.

1. It represents the form of a dialogue, or common conversation, which is a much more easy, more pleasant, and more sprightly way of instruction, and more fit to excite the attention and sharpen the penetration of the learner, than solitary reading or silent attention to a lecture. Man, being a social creature, delights more in conversation, and learns better this way, if it be wisely and happily practiced.

2. This method has something very obliging in it, and carries a very humble and condescending air, when he that instructs seems to be the inquirer, and seeks information from him who learns.

3. It leads the learner into the knowledge of truth, as it were, by his own invention, which is a very pleasing thing to human nature; and by questions pertinently and artificially proposed, it does as effectually draw him on to discover his own mistakes, which he is much more easily persuaded to relinquish when he seems to have discovered them himself.

4. It is managed, in a great measure, in the form of the most easy reasoning; always arising from something asserted or known in the foregoing answer, and so proceeding to inquire something unknown in the following question, which again makes way for the next answer. Now such an exercise is very alluring and entertaining to the understanding, while its own reasoning powers are all along employed, and that without labor or difficulty, because the querist finds out and proposes all the intermediate ideas or middle terms.

The following remarks are abridged from "*An Apology or Defense of the Catechetical Method*," by Dr. Dinter:—

The catechetical method is the science, art, manner (or call it what you will) of instructing beginners by means of question and answer. This art I have undertaken to defend against its opponents. Who, then, are its opponents? They are of different kinds, and assume various grounds of objection.

The first class object, that the subject-matter of the instruction is not by this method learnt in an orderly manner, and that it is only, as it were, a haphazard kind of knowledge that is thus acquired. Thus it fares with the catechetical method as with philosophy, the mathematics, religion, &c. He who is wholly unacquainted with it, or who only half knows it, rails against it. But have you ever heard of one who had catechised efficiently, and in the true Socratic manner, for the space of ten years, who gave up the method, saying he had proved that it was good for nothing; that men can not by means of it be made more intelligent or better? The physician who, after a professional experience of forty years, employs a remedy, must, indeed, be in a condition to form a correct opinion of its probable effect. But he who only knows such remedy through books, may very easily form a false opinion respecting it. As judges of philosophy we select only philosophers; and to judge of the catechetical method, therefore, only those who are themselves conversant with it. In England, lords only judge lords.

A second class of opponents appear not to know themselves what they speak against. At one time they condemn all catechising; at another time they speak as if it were only the Socratic method to which they are opposed; so that one does not know well what to make of such complaints. But suppose the catechetical method be rejected entirely, pray what better method are our opponents pre-

pared to substitute in its place? Shall I tell you in what light such opponents appear to me? Like the man who wished to banish Aristides. Why? "I don't," said he, "at all know Aristides; but I am greatly chagrined that so much should be made of him everywhere."

*There is a third class of enemies to the catechetical method; they are the least culpable in their opposition, but perhaps not the most harmless.* They are, however, those whom I hope to be able most easily to reconcile. They have adopted other methods, and have become attached to them; and one can not give up, with indifference, anything to the use of which one has become habituated. Their opposition, however, seems to be founded on a misapprehension. They seem to think that the friends of the catechetical method desire that it should be employed in teaching every subject, and in all the classes in the school. But such is far from being the case. The catechetical method has its proper sphere and its proper limits; and it is only within these that its friends would wish to see it employed.

What, then, further are the charges brought against the catechetical method by these our opponents? Let us hear them, and examine them. 1st. It is too difficult. 2d. It is too tedious. 3d. It is not suitable to all subjects. 4th. It educates only in a one-sided manner. 5th. It over-educates. Five grave charges. I trust, however, to be able to disprove them all.

1. It is too difficult. What is it? The analytic-catechetical method? Certainly not. When a man has thought out a subject in a clear manner—and this is what every teacher ought to be able to do—he is then in a condition to analyze such subject, and to explain to his pupils whatever may be obscure in it, and again to question the meaning of it out of them; and, when a section is thus finished, to present a summary of the whole. A thing much more difficult than this, is the teaching to read, especially according to the old-fashioned plan.

But what part of instruction is not difficult?

Those who would convert teaching into a mere mechanical process, would deprive it of its true dignity; and whoever does not wish to do this, must, at least, admit the necessity of the subject-matter of the instruction being duly analyzed. The catechetical method, when compared with other methods of instruction, will be found to be easier rather than more difficult. And however difficult it may be, suffice it to say, that it is necessary. It is too difficult only for those who have not at all practiced it. It becomes easier, too, the more intimately the teacher becomes acquainted with the way by which the pupils arrive at a clear knowledge of whatever subject is brought before them.

He who examines badly, will most probably catechize still worse. Hence it comes that the method itself is esteemed so difficult. "I have," says one, "heard very many catechists, but among them all there were but few indeed really good ones." What follows from this? "That we should not at all attempt to employ the method!" Is, then, preaching easier? I, who am vain enough to think that I know both, believe it is not. If we would, therefore, act justly, we must either condemn the practice of preaching, or else *not* condemn the catechetical method.

Moreover, the difficulty of the catechetical method, and the few preëminently good catechists that are to be met with, are no valid objections against the study and practice of the method itself.

We do not forbid men to philosophize because a *Kant* seldom arises, nor to paint because a *Mengo* is rare. But enough of this charge. Let us examine the second.

2. The catechetical method renders the instruction too tedious and prolix. That the employment of the catechetical method does not engross more time than is compatible with the claims of our elementary schools, I have fully proved by a thirty years' experience of it. It is, indeed, difficult at first. But as soon as the pupils acquire courage to speak out freely, then all goes on quickly enough; and the pleasure of the little folks increases from week to week, with the free use of their own powers.

The catechetical method, when rightly employed, impresses the instruction more deeply on the mind than, perhaps, any other method. By means of it, similar ideas are so associated in the minds of the pupils, that, on any exciting cause awakening one idea, the whole series is readily and vividly called up in the mind. But even if other methods were shorter, we should still prefer the catechetical method, as being the most effectual. The greatest economist does not re-use to employ his money, provided he is sure of thereby increasing it. Just

so, the educator is aware that the time which, in certain stages of education, may seem, to a superficial observer, to be misspent, will, by and by, like money well employed, be repaid with a rich interest.

3. The third objection—viz., that the catechetical method is not suitable to all subjects—is least frequently heard, and most easily confuted.

Must, then, any one method be either applied or applicable to the teaching of all branches of instruction? This objection is just about as much worth as if one should complain that a razor was good for nothing, because its edge was spoiled by cutting bread with it; for which purpose it was, of course, never intended. If a thing answers the purpose for which it was designed, it is all that ought to be expected from it.

For instance, it is no more a valid objection against the catechetical method, to say that Geography, some parts of Natural Philosophy, &c., can not be taught by it, so as to supersede the necessity of visible illustrations, than it would be a valid objection against the method usually employed to impart religious instruction, to say that such method is not suited to the teaching of arithmetic, &c.

4. The catechetical method, says the fourth class of our opponents, educates only in a one-sided manner. They allow that it may be employed with advantage to awaken and strengthen the understanding, but that this it effects at the expense of the other powers. The feelings, for instance, say they, remain uninfluenced. They further object, that the method analyzes the ideas, and teaches the child himself to investigate and sift every thing that comes under his notice; and thus it treats the most sacred subjects as if they were mere matters of fact, appealing to the reason only. Some of the specimens of the catechetical method that have been published are, I allow, open to these objections. Some of these writers appear to me in pretty much the same position as the organist to whom the chapel-master Newman said, that "*he committed no other fault than this, that he committed no fault*;" and when begged to explain this Delphic saying, he added, that the attention he gave to all the minutiae, and the fear lest he should play the slightest grace falsely, so occupied his entire soul, that, though he played the notes correctly, yet he did not infuse into the whole piece a proper spirit. But this is by no means the case with all the writers on the catechetical method; and much less is it the case with the many worthy men who daily practice it.

I myself think with pleasure on the happy years I spent as a village school-master. I have enjoyed many happy hours, but none have been more happy to me than those in which my upper classes imbibed from my mouth, yea, warm from my heart, the words of the Lord—those truths of religion, which I had myself previously examined and carefully thought out, in order that I might the more deeply and vividly experience their truth and reality.

Think ye—that at these times, when I was thus humbly endeavoring to carry into practice that method for which I am now pleading, and when my labors were not unfrequently rewarded by the sympathetic tear of love—think ye—that on such occasions the feelings of either the teacher or the taught remain uninfluenced for good? The cherished recollections of such scenes yet awaken in my bosom the tenderest sentiments of which my nature is susceptible.

5. But "the catechetical method over-educates." Let us hear nothing of this complaint while our own peasantry, generally, are yet unable to understand the simplest sermon; and three-fourths of the inhabitants of our towns, though better clothed indeed, are not a whit before our peasantry in their intellectual culture. Nor let such a complaint be heard while superstition finds everywhere her altars. Let us first duly extend education, before we entertain any fears about over-education.

There are only three ways in which, according to my view of the matter, there can be said to be an over-education:—First, when any one of the mental powers is developed and educated to the detriment of the other powers which remain uncultivated, and consequently, as it were, barren and useless. Secondly, where there is imparted a mass of inappropriate information, which is calculated to render men discontented with their social position, and thus to incapacitate them for the due discharge of their every-day duties. And, thirdly, where the powers are exercised solely upon groveling and unworthy subjects which are not calculated to promote a suitable human culture. But I need hardly say that to none of these charges is the catechetical method justly liable. The catechetical method, it is true, teaches our people to think for themselves; but who is there despotic enough to say that our people ought to be deprived of this, the most sacred of human rights?

But, in conclusion, shall I tell you with what, it seems to me, I might aptly compare the catechetical method? With the magistracy of Capua, mentioned by Livy. Perhaps this half-earnest, half-jocular anecdote may have escaped your memory. The substance of it is simply this: The people of Capua were loud in their complaints that their magistracy was good for nothing. One of the inhabitants, who wished to preserve the magistracy in office, set to work in the following manner. He called the people together, and explained to them that he had observed that the present Senate had lost the confidence of the people. "Hear! hear!—lost it completely!" shouted the embittered populace. "In my opinion, therefore," rejoined the speaker, "it ought to be deposed. But of course the commonwealth can not exist without any Senate at all." "No; but a new election shall be made," shouted the people. "That, too, is my opinion," retorted the speaker. Immediately, this one, that one, and the other one, were proposed as members of the new magistracy. But soon all became tumult. One party did not possess any reputation, another was known to have a bad one, a third was too young, too inexperienced—the fourth was too old, too powerless, and besides, had never achieved any thing remarkable. What was the end of all this? The Senate was allowed to remain as it had been before, but was cautioned not to abuse its rights, and to allow the people to give an opinion on matters that concerned them; and thus the affair was amicably arranged. Need I tell you whom the people of Capua resemble?

### III. PUBLIC INSTRUCTION IN FRANCE.

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#### I. PRIMARY INSTRUCTION.

BEFORE 1789, religious zeal, the spirit of association, the desire of living honorably in the recollection of mankind as the founder of pious or learned institutions, individual enterprise, and to some extent government endowment, had covered France with establishments of higher education, and with men consecrated to their service. This was particularly true with regard to schools for classical education, and the instruction generally of all but the poorer classes of society. In grammar schools and colleges, France was as well provided in 1789, as in 1849. In the upbreak and overthrow of government and society, which took place between 1789 and 1794, and which was, in no small measure, the result of the neglected education of the great mass of the people, these public endowments, many of which had existed for centuries, were destroyed, and these religious and lay congregations, such as the Benedictines, Jesuits, Oratorians, Doctrinaires, Lazaristes, and Brothers of the Christian Doctrine, were abolished, their property confiscated, and most of them were never again re-established. From 1791 to 1794, by various ordinances of the Convention, a system of public schools was projected, in which primary education was to be free to all at the expense of the State. Out of these ordinances sprung the first Normal School in France, and the Polytechnic School in 1794. But the promise of good primary schools was not realized, and the Normal School was abolished in the following year. In 1802 the promise was renewed in a new ordinance, but amid the din of arms, the peculiar fruits of peace could not ripen. In 1808 Napoleon organized the Imperial University, embracing under that designation the governmental control of all the educational institutions of France, primary, secondary, and superior. In one of his decrees, primary instruction (intended for the masses of society) was limited to reading, writing and arithmetic, and the legal authorities were enjoined "to watch that the teachers did not carry their instructions beyond these limits." Under the organization established by Napoleon, and with views of primary education but little expanded beyond the imperial ordinance referred to, and with even these limited views unrealized, the government continued to administer the system of public education till the Revolution of 1830. In the mean time the wants of a more generous and complete system of primary schools had been felt



throughout France, and one of the first steps of the new government was to supply this want, and most considerably and thoroughly was the work accomplished. Not only were steps taken to increase the number and efficiency of the schools already established, by additional appropriations for their support, but the Department of Public Instruction was re-organized. Normal Schools for the education of Teachers were multiplied, and made effective, and the experience of the best educated states in Europe was consulted in reference to the reconstruction of the whole system.

There is nothing in the history of modern civilization more truly sublime than the establishment of the present Law of Primary Instruction in France. As has been justly remarked by an English writer, "Few nations ever suffered more bitter humiliation than the Prussians and French mutually inflicted during the earlier years of the present century; and it was supposed that feelings of exasperation and national antipathy thus engendered by the force of circumstances, were ready, on the match being applied, to burst forth in terrible explosion. At the very time, however, when the elements of mischief were believed to be most active in the breasts of a people jealous of their honor, and peculiarly sensitive to insult, the French ministry, with the consent of the King and Chambers, send one of their ablest and wisest citizens, not to hurl defiance or demand restitution, but to take lessons in the art of training youth to knowledge and virtue, and that too in the capital of the very nation whose troops, sixteen years before, had, on a less peaceful mission, bivouacked in the streets of Paris, and planted their victorious cannon at the passages of her bridges. There are not many facts in the past history of mankind more cheering than this; not many traits of national character more magnanimous, or indicating more strikingly the progress of reason, and the coming of that time when the intercourse between nations will consist not in wars and angry protocols, but in a mutual interchange of good offices."

M. Victor Cousin, one of the most profound and popular writers of the age, in one department of literature, who was sent on this peaceful mission in the summer of 1831, submitted in the course of the year to his government, a "*Report on the condition of Public Instruction in Germany, and particularly in Prussia.*" This able document was published, and in defiance of national self-love, and the strongest national antipathies, it carried conviction throughout France. It demonstrated to the government and the people the immense superiority of all the German States, even the most insignificant duchy, over any and every department of France, in all that concerned institutions of primary and secondary education. The following extracts will indicate the conclusions to which Cousin arrives in reference to the educational wants of his own country. After pronouncing the school law of Prussia "the most comprehensive and perfect legislative measure regarding primary instruction" with which he was acquainted, he thus addresses himself to the minister:

"Without question, in the present state of things, a law concerning primary



instruction is indispensable in France; the question is, how to produce a good one, in a country where there is a total absence of all precedent and all experience in so grave a matter. The education of the people has hitherto been so neglected,—so few trials have been made, or those trials have succeeded so ill, that we are entirely without those universally received notions, those predilections rooted in the habits and the mind of a nation, which are the conditions and the bases of all good legislation. I wish, then, for a law; and at the same time I dread it; for I tremble lest we should plunge into visionary and impracticable projects again, without attending to what actually exists.

The idea of compelling parents to send their children to school is perhaps not sufficiently diffused through the nation to justify the experiment of making it law; but everybody agrees in regarding the establishment of a school in every *commune* as necessary. It is also willingly conceded that the maintenance of this school must rest with the *commune*; always provided that, in case of inability through poverty, the *commune* shall apply to the department, and the department to the state. This point may be assumed as universally admitted, and may therefore become law.

You are likewise aware that many of the councils of departments have felt the necessity of securing a supply of schoolmasters, and a more complete education for them, and have, with this view, established primary Normal Schools in their departments. Indeed, they have often shown rather prodigality than parsimony on this head. This, too, is a most valuable and encouraging indication; and a law ordaining the establishment of a primary Normal School in each department, as well as a primary school in each *commune*, would do little more than confirm and generalize what is now actually doing in almost all parts of the country. Of course this primary Normal School must be more or less considerable according to the resources of each department.

Here we have already two most important points on which the country is almost unanimously agreed. You have also, without doubt, been struck by the petitions of a number of towns, great and small, for the establishment of schools of a class rather higher than the common primary schools; such as, though still inferior in classical and scientific studies to our royal and communal *colleges*, might be more particularly adapted to give that kind of generally useful knowledge indispensable to the large portion of the population which is not intended for the learned professions, but which yet needs more extended and varied acquirements than the class of day-laborers and artisans. Such petitions are almost universal. Several municipal councils have voted considerable funds for the purpose, and have applied to us for the necessary authority, for advice and assistance. It is impossible not to regard this as the symptom of a real want,—the indication of a serious deficiency in our system of public instruction.

You are sufficiently acquainted with my zeal for classical and scientific studies; not only do I think that we must keep up to the plan of study prescribed in our *colleges*, and particularly the philological part of that plan, but I think we ought to raise and extend it, and thus, while we maintain our incontestable superiority in the physical and mathematical sciences, endeavor to rival Germany in the solidity of our classical learning.

Let our royal *colleges* then, and even a great proportion of our communal *colleges*, continue to lead the youth of France into this sanctuary; they will merit the thanks of their country. But can the whole population enter learned schools? or, indeed, is it to be wished that it should? Primary instruction with us, however, is but meager; between that and the *colleges* there is nothing; so that a tradesman, even in the lower ranks of the middle classes, who has the honorable wish of giving his sons a good education, has no resource but to send them to the *college*. Two great evils are the consequence. In general, these boys, who know that they are not destined to any very distinguished career, go through their studies in a negligent manner; they never get beyond mediocrity; and when, at about eighteen, they go back to the habits and the business of their fathers, as there is nothing in their ordinary life to recall or to keep up their studies, a few years obliterate every trace of the little classical learning they acquired. On the other hand, these young men often contract tastes and acquaintances at *college* which render it difficult, nay, almost impossible, for them to return to the humble way of life to which they were born: hence a race of men restless, discontented with their position, with others, and with themselves; enemies of a state of society in which they feel themselves out of their

place; and with some acquirements, some real or imagined talent, and unbridled ambition, ready to rush into any career of servility or of revolt. The question then is, whether we are prepared to make ourselves responsible to the state and society for training up such a race of malcontents? Unquestionably, as I shall take occasion to say elsewhere, a certain number of exhibitions (*bourses*) ought to be given to poor boys who evince remarkable aptness: this is a sacred duty we owe to talent; a duty which must be fulfilled, even at the risk of being sometimes mistaken. These boys, chosen for the promise they give, go through their studies well and thoroughly, and on leaving school experience the same assistance they received on entering. Thus they are enabled, at a later period of life, to display their talents in the learned and liberal professions which are open to them, to the advantage of the state to which they owe their education. As, however, it is impossible for any government to find employment for every body, it ought not to furnish facilities for every body to quit the track in which his fathers have trod. Our *collèges* ought, without doubt, to remain open to all who can pay the expense of them; but we ought by no means to force the lower classes into them; yet this is the inevitable effect of having no intermediate establishments between the primary schools and the *collèges*. Germany and Prussia more especially, are rich in establishments of this kind. You perceive that I allude to the schools called tradesmen's or burghers' schools, or schools for the middle classes, (*Bürgerschulen*), *écoles bourgeoises*, a name which it is perhaps impossible to transplant into France, but which is accurate and expressive, as contradistinguishing them from the learned schools, (*Gelchrtschulen*), called in Germany *gymnasias*, and in France *collèges*, (in England, "grammar-schools,") a name, too, honorable to the class for whose especial use and benefit they are provided; honorable to those of a lower class, who by frequenting them can rise to a level with that above them. The burgher schools form the higher step of primary instruction, of which the elementary schools are the lower step. Thus there are but two steps or gradations: 1<sup>o</sup>. Elementary schools,—the common basis of all popular instruction in town and country; 2<sup>o</sup>. Burgher schools, which, in towns of some size and containing a middle class, furnish an education sufficiently extensive and liberal to all who do not intend to enter the learned professions. The Prussian law, which fixes a minimum of instruction for the elementary schools, likewise fixes a minimum of instruction for the burgher schools; and there are two kinds of examination, extremely distinct, for obtaining the brevet of primary teacher for these two gradations. The elementary instruction must be uniform and invariable, for the primary schools represent the body of the nation, and are destined to nourish and to strengthen the national unity; and, generally speaking, it is not expedient that the limit fixed by the law for elementary instruction should be exceeded: but this is not the case with the burgher schools, for these are designed for a class among whom a great many shades and diversities exist,—the middle class. It is therefore natural and reasonable that it should be susceptible of extension and elevation, in proportion to the importance of the town, and the character of the population for whom it is destined. In Prussia this class of schools has, accordingly, very different gradations, from the minimum fixed by the law, to that point where it becomes closely allied with the gymnasium, properly so called. At this point it sometimes takes the name of Progymnasium, or preparatory gymnasium, in which classical and scientific instruction stops short within certain limits, but in which the middle or trading class may obtain a truly liberal education. In general, the German burgher schools, which are a little inferior to our communal *collèges* in classical and scientific studies, are incomparably superior to them in religious instruction, geography, history, modern languages, music, drawing, and national literature.

In my opinion, it is of the highest importance to create in France, under one name or another, burgher schools, or schools for the middle classes, which give a very varied education; and to convert a certain number of our communal *collèges* into schools of that description. I regard this as an affair of state.

There is a cry raised from one end of France to the other, demanding on behalf of three-fourths of the population, establishments which may fill the middle ground between the simple elementary schools and the *collèges*. The demands are urgent and almost unanimous.

The most difficult point in law on primary instruction is the determination what are the authorities to be employed. Here also let us consult facts. The

French administration is the glory and the masterwork of the imperial government. The organization of France in *mairies* and prefectures, with municipal and departmental councils, is the foundation of government and of social order. This foundation has stood firm amidst so much ruin, that prudence and policy seem to point to it as the best and safest prop. Moreover, this organization has just been reformed and vivified by rendering the municipal and departmental councils elective and popular. Thus the French administration unites all that we want, activity and popularity. The administration, then, is what you must call to your aid. Recollect, also, that it is these local councils that pay, and that you can not fairly expect much from them unless they have a large share in the disbursement of the money they have voted. These councils are chosen out of the body of the people, and return to it again; they are incessantly in contact with the people; they are the people legally represented, as the *maires* and the prefects are these councils embodied, if I may so say, in one person, for the sake of activity and despatch. I regard, then, as another incontestable point, the necessary intervention of the municipal and departmental councils in the management of public instruction. As there ought to be a school in every *commune*, so there ought to be for every communal school a special committee of superintendence, which ought to be formed out of the municipal council, and presided over by the *maire*. I shall perhaps be told, that men who are fit to conduct the business of the *commune* are not fit to superintend the communal school. I deny it: nothing is wanted for this superintendence but zeal, and fathers of families can not want zeal where their dearest interests are concerned. In Prussia no difficulty is found in this matter, and every parish-school has its *Schulvorstand*, in great part elective. Over the heads of these local committees there ought to be a central committee in the chief town of each department, chosen out of the council of the department, and presided over by the prefect. The committee of each *commune* would correspond with the committee of the department; that is to say, in short, the *maire*, with the prefect. This correspondence would stimulate the zeal of both committees. By it, the departmental committee would know what is the annual supply of schoolmasters required for the whole department, and consequently, the number of masters the Normal School of the department ought to furnish, and consequently, the number of pupils it ought to admit. It would have incessantly to urge on the zeal of the local committees in establishing and improving schools, for the sake of providing as well as possible for the pupils it sends out of its Normal School. Nothing can be more simple than this organization. It is, applied to primary instruction, what takes place in the ordinary administration: I mean, the combined action of the municipal councils and the departmental councils,—of the *maires* and the prefects.

After the administrative authorities, it is unquestionably the clergy who ought to occupy the most important place in the business of popular education. The rational middle course is to put the *cure* or the pastor, *i. e.* the Catholic and the Protestant clergyman—and if need be both, on every communal committee; and the highest dignitary of the church in each department, on the departmental committee. We must neither deliver over our committees into the hands of the clergy, nor exclude them; we must admit them, because they have a right to be there, and to represent the religion of the country. The men of good sense, good manners, and of consideration in their neighborhood, of whom these committees ought to be, and will be, composed, will gradually gain ascendancy over their ecclesiastical colleagues, by treating them with the respect due to their sacred functions. We must have the clergy; we must neglect nothing to bring them into the path toward which every thing urges them to turn; both their obvious interest, and their sacred calling, and the ancient services which their order rendered to the cause of civilization in Europe. But if we wish to have the clergy allied with us in the work of popular instruction, that instruction must not be stripped of morality and religion; for then indeed it would become the duty of the clergy to oppose it, and they would have the sympathy of all virtuous men, of all good fathers of families, and even of the mass of the people, on their side. Thank God, you are too enlightened a statesman to think that true popular instruction can exist without moral education, popular morality without religion, or popular religion without a church.

The proceedings of the communal and departmental committees, the *maire*•

sub-prefects and prefects, ought, like all the other parts of the administration, to refer to one common center, from which a vigorous impulse and a supreme guidance may emanate, and upon whom all the responsibility before the chambers may rest. This center, in France, as in Prussia, is, the ministry and council of public instruction. This is not only according to law, but to nature and reason. It is perfectly consistent to leave primary instruction to the minister who has all the rest of public instruction, as well as ecclesiastical affairs, in his hands; that is to say, the two things with which the education of the people is the most intimately connected. Has any evil resulted from the present order of things? Far from it: every body is agreed that the minister and his council have done a great deal for primary instruction since the revolution of July. As you would have been able to effect nothing without the municipal and departmental councils, the *maires* and prefects, so those authorities acknowledge that they could have done little or nothing without your co-operation and direction. It is you who excited their zeal, who supported and encouraged them; you who, as the enlightened dispenser of the funds placed in your hands by the two chambers, have given vigor to public instruction by giving proportionate aid to necessitous places.

I strongly recommend the creation of a special inspector of primary instruction for each department. Our academical inspectors should be reserved for schools of the second class, which will suffice, and more than suffice, to employ all their powers, and all their diligence. Your natural agents and correspondents for primary instruction are the prefects, who would preside over the departmental committees, and to whom the correspondence of *maires* and communal committees, as well as the report of the departmental inspector, would be addressed.

The prefects would correspond officially with you, as they have hitherto done extra-officially; and there would be a councilor in the central council of public instruction, specially charged with the reports to be made on that portion of the business, as in fact there is now. This machinery is very simple, and would produce quick results; being less complex, it would work more freely. The only thing in which I would employ agents taken from the body of teachers would be, the commission of examination appointed for granting schoolmasters' brevets. No one disputes that professors have peculiar qualifications, and all the necessary impartiality, for that office. I should wish, then, that the examination-commission should be appointed by you, and composed of masters or professors of the royal or the communal *collèges* of the department; adding, for the religious part, a clergyman proposed by the bishop.

As to private teachers, and what people are pleased to call liberty of primary tuition, we must neither oppose it, nor reckon upon it. There are branches of the public service which must be secured against all casualties by the state, and in the first rank of these is primary instruction. It is the bounden duty of government to guarantee it against all caprices of public opinion, and against the variable and uncertain calculations of those who would engage in it as a means of subsistence. On this principle are founded our primary Normal Schools in each department, bound to furnish annually the average number of schoolmasters required by the department. We must rely exclusively on these Normal Schools for the regular supply of communal teachers.

But if, in the face of our primary communal schools, there are persons who, without having passed through the Normal Schools, choose to establish schools at their own risk and peril, it is obvious that they ought not only to be tolerated, but encouraged; just as we rejoice that private institutions and boarding-schools should spring up beside our royal and communal *collèges*. This competition can not be otherwise than useful, in every point of view. If the private schools prosper, so much the better; they are at full liberty to try all sorts of new methods, and to make experiments in teaching, which, on such a scale, can not be very perilous. At all events, there are our Normal Schools. Thus all interests are reconciled; the duties of the state, and the rights of individuals; the claims of experience, and those of innovation. Whoever wishes to set up a private school must be subject to only two conditions, from which no school, public or private, can on any pretext be exempt,—the brevet of capacity, given by the commission of examination, and the supervision of the committee of the commune and of the inspector of the department.

All these measures, on which I will not enlarge, are more or less founded on

existing facts; they have the sanction of experience; it would be simply advantageous to add that of law. On all the points concerning which the law is silent, experiments might be made. Among these experiments some would probably be successful: when sufficiently long practice had confirmed them, they might be inserted in a new law; or *ordonnances* and instructions, maturely weighed by the royal council, would convert them into general and official measures. Nothing must pass into a law which has not the warranty of success. Laws are not to be perilous experiments on society; they ought simply to sum up and to generalize the lessons of experience."

On the experience of Prussia as a basis, a great and comprehensive measure of elementary education for France was framed by M. Guizot. The bill was reported in 1832. In introducing the measure to the consideration of the Chamber of Deputies, M. Guizot made a speech as remarkable for its eloquence as for its large and liberal views of popular education, as will be indicated by the following passages:

"In framing this bill, it is experience, and experience alone, that we have taken for our guide. The principles and practices recommended have been supplied to us by facts. There is not one part of the mechanism which has not been worked successfully. We conceive that, on the subject of the education of the people, our business is rather to methodize and improve what exists, than to destroy for the purpose of inventing and renewing upon the faith of dangerous theories. It is by laboring incessantly on these maxims, that the Administration has been enabled to communicate a firm and steady movement to this important branch of the public service; so much so, that we take leave to say, that more has been done for primary education during the last two years, (1831, 1832,) and by the Government of July, than during the forty years preceding, by all the former Governments. The first Revolution was lavish of promises, without troubling itself about the performance. The Imperial Government exhausted itself in efforts to regenerate the higher instruction, called secondary; but did nothing for that of the people. The restored Dynasty, up to 1828, expended no more than 50,000 francs annually upon primary instruction. The Ministry of 1828 obtained from the Chamber a grant of 300,000 francs. Since the Revolution of July, 1830, a million has been voted annually—that is, more in two years than the Restoration in fifteen. Those are the means, and here are the results. All of you are aware that primary instruction depends altogether on the corresponding Normal Schools. The prosperity of these establishments is the measure of its progress. The Imperial Government, which first pronounced with effect the words, Normal Schools, left us a legacy of one. The Restoration added five or six. Those, of which some were in their infancy, we have greatly improved within the last two years, and have, at the same time, established thirty new ones; twenty of which are in full operation, forming in each department a vast focus of light, scattering its rays in all directions among the people."

The Bill recognized two degrees of primary instruction, viz. elementary and superior, in speaking of which M. Guizot remarks:

"The first degree of instruction should be common to the country and the towns; it should be met with in the humblest borough, as well as in the largest city, wherever a human being is to be found within our land of France. By the teaching of reading, writing, and accounts, it provides for the most essential wants of life; by that of the legal system of weights and measures, and of the French language, it implants, enlarges, and spreads every where the spirit and unity of the French nationality; finally, by moral and religious instruction, it provides for another class of wants quite as real as the others, and which Providence has placed in the hearts of the poorest, as well as of the richest, in this world, for upholding the dignity of human life and the protection of social order. The first degree of instruction is extensive enough to make a man of him who will receive it, and is, at the same time, sufficiently limited to be every where realized. It is the strict debt of the country toward all its children.

But the law is so framed, that by higher elementary schools, primary in-

struction can be so developed, so varied, as to satisfy the wants of those professions which, though not scientific, yet require to be acquainted with 'the elements of science, as they apply it every day in the office, the workshop, and field.'

On the plan of supervision of schools, which embraced both local and state inspection, the Minister remarks:

"In the first place, this operation demands, at certain times of the year, much more time, application, and patience, than can reasonably be expected from men of the world, like the member of the council of the *arrondissement* and of the department; or from men of business, necessarily confined to their homes, like the members of the municipal council. In the next place, positive and technical knowledge of the various matters on which the examination turns is absolutely necessary; and it is not sufficient to have such knowledge, it must have been proved to exist, in order to give to these examinations the requisite weight and authority. For these reasons, the members of these commissions ought to be, in great part, men specially qualified—men familiar with the business of tuition. It is evident that primary instruction rests entirely on these examinations. Suppose a little negligence, a little false indulgence, a little ignorance, and it is all over with primary instruction. It is necessary then, to compose these commissions with the most scrupulous severity, and to appoint only persons versed in the matter."

The necessity of providing for the professional education and training of teachers is thus eloquently set forth:

"All the provisions hitherto described would be of none effect, if we took no pains to procure for the public school thus constituted, an able master, and worthy of the high vocation of instructing the people. It can not be too often repeated, that it is the master that makes the school. And, indeed, what a well-assorted union of qualities is required to constitute a good schoolmaster! A good schoolmaster ought to be a man who knows much more than he is called upon to teach, that he may teach with intelligence and with taste; who is to live in a humble sphere, and yet to have a noble and elevated mind, that he may preserve that dignity of sentiment and of deportment, without which he will never obtain the respect and confidence of families; who possesses a rare mixture of gentleness and firmness; for, inferior though he be in station to many individuals in the *commune*, he ought to be the obsequious servant of none;—a man not ignorant of his rights, but thinking much more of his duties; showing to all a good example, and serving to all as a counselor; not given to change his condition, but satisfied with his situation, because it gives him the power of doing good; and who has made up his mind to live and to die in the service of primary instruction, which to him is the service of God and his fellow-creatures. To rear masters approaching to such a model is a difficult task; and yet we must succeed in it, or else we have done nothing for elementary instruction. A bad schoolmaster, like a bad parish priest, is a scourge to a *commune*; and though we are often obliged to be contented with indifferent ones, we must do our best to improve the average quality. We have, therefore, availed ourselves of a bright thought struck out in the heat of the Revolution, by a decree of the National Convention, in 1794, and afterward applied by Napoleon, in his decree, in 1808, for the organization of the University, to the establishment of his central Normal School at Paris. We carry its application still lower than he did in the social scale, when we propose that no school-master shall be appointed who has not himself been a pupil of the school which instructs in the art of teaching, and who is not certified, after a strict examination, to have profited by the opportunities he has enjoyed."

No statesman of any age or country, has expressed in language at once eloquent and just, a more exalted estimate of the mission of the teacher. Although not uttered in this connection, the following passages will illustrate the views presented above:

"Humble as the career of a schoolmaster may be, and though doomed to pass his whole existence most frequently within the sphere of a small community,



his labors are, nevertheless, felt throughout society at large, and his profession is as important as that of any other public functionary. It is not for any particular parish alone, or merely local interest, that the law demands that every man should acquire, if possible, the knowledge which is indispensable in social life, and without which intelligence often languishes and degenerates; it is for the state itself and the public interest; it is because liberty is certain and steadfast only among people enlightened enough to listen, in every circumstance, to the voice of Reason. Public elementary instruction is one of the guarantees of order and social stability. Doomed to pass his life in discharging the monotonous duties of his vocation, sometimes even in struggling with the injustice or the ingratitude of ignorance, the parish schoolmaster would often repine, and perhaps sink under his afflictions, did he not draw strength and courage from another and higher source than that of immediate and mere personal interest. A deep sense of the moral importance of his duties must support and encourage him; and the austere pleasure of having rendered service to mankind, must become the worthy recompense which his own conscience alone can give. It is his glory to pretend to nothing beyond the sphere of his obscure and laborious condition; to exhaust his strength in sacrifices, which are scarcely noticed by those who reap their benefit; to labor, in short, for his fellow-beings, and to look for his reward only to God.

Your first duty is toward the children confided to your care. The teacher is summoned upon by the parent to share his authority; this authority he must exercise with the same vigilance, and almost with the same affection. Not only is the health of the children committed to him, but the cultivation of their affections and intelligence depends almost entirely on him. In all that concerns education, as it is generally understood, you shall want for nothing that can be of service to you; but as to the moral education of the children, I trust especially to you. Nothing can supply for you, the desire of faithfully doing what is right. You must be aware, that, in confiding a child to your care, every family expects that you will send him back an honest man; the country, that he will be made a good citizen. You know that virtue does not always follow in the train of knowledge; and that the lessons received by children might become dangerous to them, were they addressed exclusively to the understanding. Let the teacher, therefore, bestow his first care on the cultivation of the moral qualities of his pupils. He must unceasingly endeavor to propagate and establish those imperishable principles of morality and reason—without which, universal order is in danger; and to sow in the hearts of the young those seeds of virtue and honor, which age, riper years, and the passions, will never destroy. Faith in Divine providence, the sacredness of duty, submission to parental authority, the respect due to the laws, to the king, and to the rights of every one—such are the sentiments which the teacher will strive to develop.

The intercourse between the teacher and parents can not fail of being frequent. Over this, kindness must preside: were a teacher not to possess the respect and sympathy of the parents, his authority over their children would be compromised, and the fruit of his lessons lost; he can not, therefore, be too careful and prudent in regard of these connections. An intimacy inconsiderately formed might injure his independence, and sometimes even mix him up with those local dissensions which frequently distract small communities. While civilly yielding to the reasonable demands of parents, he must, at the same time, be particularly careful not to sacrifice to their capricious exactions his educational principles, and the discipline of the school.

The duties of the teacher toward those in authority are still clearer, and not less important. He is himself an authority in his parish; how then can it be fitting that he give an example of insubordination? Wherefore should he not respect the magistracy, religious authority, and the legal powers, whereby public security is maintained?

The Mayor is the head of the community; the interest, therefore, as well as the duty of the schoolmaster, is to exemplify on every occasion the respect due to him. The vicar and pastor are also entitled to respect, for their mission is in accordance with all that is most elevated in human nature. Nothing, besides, is more desirable than a perfect understanding between the minister of religion and the teacher; both are in possession of moral authority; both require the confidence of families; both can agree in exercising over the children committed to their care, in several ways, a common influence."



With such enlarged views of the scope, and agencies, and ends of primary instruction, the bill was framed and introduced into the Chamber of Deputies and of Peers. It was referred to committees, who reported through M. Renouard in the lower, and M. Cousin in the upper house. These reports are full and elaborate discussions of great principles, and especially that of M. Cousin.

The bill, after going through a protracted examination and discussion of its details, received the sanction of the Chambers and the King, and became a law on the 28th of June, 1833. Under the wise and energetic administration of the department of public instruction, by such men as Guizot, Cousin, Villemain, and Salvandy, the system went into immediate and successful operation, giving a powerful impulse to the progress of popular intelligence throughout the whole domain of France. Experience has brought to light some imperfections and deficiencies, some of which have been remedied or supplied, and others are still under discussion. We must wait till a generation has passed through the course of instruction now provided by law, and come into active life, before we can fully appreciate the wise forecast of the labors of Cousin and Guizot in this long neglected field of primary education.

It should be added, that a private association, called "The Society for Elementary Instruction," was very instrumental in waking up the attention of the people and of government to the condition and improvement of primary schools. This society was formed in 1805, by a number of distinguished philanthropists, and has continued in active operation to the present time. It has been instrumental in establishing infant schools, schools for needle-work, adult schools and classes, reformatory schools, associations for teachers, village libraries in various parts of France, and has a complete series of popular schools under its immediate management, in Paris. The Minister of Public Instruction, in 1835, ascribed to it the honor of having given the first impulse to the present school law. It publishes a monthly journal of its proceedings, and was mainly instrumental in establishing, in 1830, the "Journal de l'Instruction Elémentaire," which is still continued under the title of "Manuel Général de l'Instruction Primaire," and is the official organ of the Minister of Public Instruction. There is also published another educational journal, called "L'Echo des Ecoles Primaires," devoted to the dissemination of improved methods of instruction. It commenced in 1837, and was for several years under the editorship of M. Cousin, assisted by many of the best teachers and educators in France. We noticed articles by Beudant, Willm, Parandier, Philippart, and several directors of Normal Schools, and Inspectors of the Primary Schools. Upward of one hundred volumes on the science and art of education have been published in Paris since 1835; several of these are by men of the best intellect, and large practical and benevolent views.

## OUTLINE

OF THE

### SYSTEM OF PUBLIC INSTRUCTION IN FRANCE

FRANCE is divided by law for municipal and all administrative purposes, into 86 Departments, 363 Arrondissements, 2,842 Cantons, and 39,391 Communes.

In each department there is appointed by the legal voters a prefect, who is associated with a general council for the department, and a special council for each arrondissement, in the administration of the local affairs of the department; in each canton there is a judicial office, styled *juge de paix*; in each commune, a mayor, with a municipal council, elected by the people.

Since 1808 there has existed in the government a central and special department for the administration of public instruction, for the application of all funds appropriated by the state for educational, scientific or literary purposes. Over this department has presided from time to time, some of the most distinguished scholars and statesmen of France, and no branch of the public service has been regarded, for the last thirty years, with more favor by the Chambers, or the people. Since 1824, the chief of this department has had a seat in the cabinet council of the king, which consists of nine members.

To the supervision of the department of public instruction, as now organized, are assigned all schools, primary, secondary and superior, which together constitute the University of France, and are directed and superintended in its name; all scientific and literary societies to the support of which the government contributes, such as the Institute, the Academy of Medicine, &c.; all public libraries, which the state maintains, or to which it contributes; all institutions having charters prior to 1808, and which were not by royal ordinance incorporated into the University; and all encouragements, by the way of subscription, or publication, to science and letters.

The *Royal University of France* embraces the whole system of national education, and includes all the institutions for imparting instruction which are spread over the whole kingdom, from the lowest schools, up to the highest colleges. The term may thus be considered synonymous with the French national system of education.

The University is placed under the direction of a council of six members, called the "royal council of public instruction," of which the minister of public instruction is the official president. Each councilor has the special charge of one or more divisions of public instruction. Subordinate to this council are the inspectors-general of the University, who are required to examine, once a year, the institutions of every description, each within a certain district assigned to him, and to transmit a report to the council.

The University is composed of twenty-six *Academies*, each of which comprehends two, three, or more of the departments into which the kingdom is divided, and contains one or more royal colleges. The presiding officer of each academy is the rector, who is appointed by the minister of public instruction, and is assisted by two inspectors and a council. The governing body of each academy has the superintendence of all the communal colleges, institutions, *pensions*, (boarding schools,) Normal Schools,

or schools for the education of teachers, and primary schools, within the district which the seminary comprehends.

Besides the superintending body, the academy includes the teaching corps, or faculties; namely, the faculties of letters, science, medicine, law, and theology, all of which, however, do not actually exist in every academy; in some indeed, there is no organization of faculties. The faculties consist of a variable number of professors, one of whom is dean, and a committee of whom examine candidates for degrees. There are, however, some institutions which are not subject to the jurisdiction of the University; as the College of France, the Museum of Natural History, the *Ecole des Chartes*, School of Oriental Languages, the French Institute, and societies of all kinds for the advancement of knowledge.

The royal colleges are supported chiefly by the government, and the salaries of the professors, which are generally from \$400 to \$800, are paid from the budget of the minister of public instruction. The students are divided into two classes, the *internes* and *externes*, or boarders and day-scholars. The communal colleges are supported principally by the communes in which they are situate; some of them have endowments, but the majority depend chiefly for their support on the fees paid by the students. The professors or teachers receive but small salaries, varying from \$200 to \$600.

A distinguishing feature of the system of public instruction in France, is the appointment of all professors in all the colleges and lycées, and in the faculties of law, medicine, theology, and letters; and all institutions of education above the primary school, by public competition (*les concours*.) A concours may last a few days only, or it may last for months. The months of September and August are the months of vacation in the different colleges, and are usually devoted to the public competition of candidates for any professorship or chair declared to be vacant by the minister of public instruction. The judges are selected from among the most distinguished scholars in France. The mode of conducting the trial varies with the department to be filled. But it embraces every mode by which the accuracy and extent of the attainments of each candidate in the study can be tested, as well as his ability to communicate his knowledge to classes of pupils. Each candidate is subject to the criticism of his competitor. Every professor in all the colleges and great schools of France has passed through this ordeal.

Nearly all the higher schools of learning and science are concentrated in Paris. Almost all the young men who want to complete their studies, whether in letters, law, medicine, or the arts,—in short, in all those preparatory to any learned or liberal career, are forced to live in the capital. This is attended with a disastrous result, in the neglect or discontinuance of all domestic training and discipline, which can not be compensated by any superiority of mental culture, secured by the concentration of able men, and all the means and appliances of superior education at the capital.

There are six faculties of *Catholic theology*, at Aix, Bordeaux, Lyons, Paris, Rouen, and Toulouse; and two of *Protestant theology*, one of the Lutheran or Augsburg confession, at Strasburg, and another of the Calvinist or Helvetic confession, at Montauban, under the academy of Toulouse.

The faculties of law are nine, at Aix, Caen, Dijon, Grenoble, Paris, Poitiers, Rennes, Strasburg, and Toulouse. There are three faculties of medicine, at Grenoble, Paris, and Montpellier; with seventeen secondary schools of medicine.

The faculties of science are nine in number, at Paris, Bordeaux, Strasburg, Caen, Toulouse, Montpellier, Dijon, Lyons, and Grenoble; those of letters or literature, seven, at Paris, Strasburg, Bordeaux, Toulouse, Caen, Dijon, and Besangon.

In order to become a student in law or theology, a person must have taken the degree of bachelor of letters; and a course of three years in either faculty, is requisite to obtain the degree of bachelor; for the degree of doctor, four years; and to obtain the degree of doctor in divinity, the candidate must defend a final and general thesis. Candidates for the degree of doctor in medicine, must have taken the degree of bachelor of letters, and also of sciences, and must complete a course of four years. The faculties of law and medicine at Paris, are greatly distinguished. The former has sixteen professors, and had, in 1836, upward of 3000 students: the latter, twenty-seven professors, and in 1836, about 4000 students.

The law ordains at least one elementary school in every commune, and those communes in which the population exceeds 6000, are required to support one superior primary school, and are aided in opening infant schools, evening schools, classes for adults, and high schools.

Where the number of families of different sects is sufficient, the minister of public instruction is authorized to grant permission, if advisable so to do, to the commune to establish separate schools for the children of each denomination.

By a law passed in March, 1841, the duty of school attendance is made obligatory. No young person below the age of twelve years can be employed in any workshop or manufactory, unless his parents or guardians testify that he actually attends some public or private school within the locality, and all such as were so employed at the date of this law, were required to attend school till the age of twelve. All young persons above the age of twelve can be excused from attending a school, only in case a certificate can be given by the Mayor of their place of residence, that they have received the primary or elementary instruction. To meet the wants of those adults, who have grown up without the advantages of school attendance, evening schools, and classes for adults, are established and provided for, by law.

The central government, the departmental authorities, the municipal authorities, the religious authorities, the heads of families, have each their sphere of action, and their influence in the administration of primary schools.

The local management of a primary school is intrusted to a committee of the commune, consisting of the mayor, the president of the council, the *cure*, or pastor, and one person appointed by the committee of the *arrondissement* in which the commune is situated.

The general supervision of the schools of each *arrondissement* is assigned to a committee of the *arrondissement*, which consists of the mayor of the chief town, of the *juge de paix*, a pastor of each of the recognised religious sects, a professor of a college, or school of secondary instruction, a primary schoolmaster, three members of the council of the *arrondissement*, and the members of the council-general of the department who reside in the *arrondissement*.

These committees meet once a month. The communal committees inspect and report the condition of the schools in the commune to the committee of the *arrondissement*. Some member of the committee of the *arrondissement* is present at each local inspection, and a report of the whole committee on the state of education in the *arrondissement* is made annually to the minister of public instruction.

In each department there is a commission of primary education, composed of at least seven members, among which there must be a minister of each of the religious denominations recognized by law, and at least three persons who are at the time, or have been, engaged in teaching public schools of secondary instruction. This committee is charged with the examination of all candidates for the certificate of qualification to

teach primary schools, or to enter the Normal School of the department. These examinations must be public, at a time fixed, and notified by the minister, and in the chief town of the department. The examination is varied according to the grade of school for which the candidate applies. With a certificate of capacity from this commission, the candidate can teach in any commune in the department, without any local examination.

Besides these local committees the minister of public instruction appoints an inspector for every department, with assistant inspectors, when required by the exigences of the public service. The duty of the inspector is to visit every school in the department, at least once a year, and to inquire into the state of the school-house, the classification, moral character, and methods of discipline and instruction of each school. He must leave a written memorandum of all deficiencies noted in his visit, for the use of the local committee, and report annually to the prefect of the department, and through him to the minister. This stimulates and encourages teachers, as well as communes, and informs the minister of the true wants of different localities, as well as the deficiencies of the law. The inspectors are required to pay particular attention to the Normal Schools in their several departments. The inspector has a salary of two thousand francs, and an allowance of three francs a day for traveling expenses, and one franc for every school visited. In 1843 there were eighty-seven inspectors, and one hundred and fourteen sub-inspectors; and the number of communes visited by them in that year, was 30,081, making 50,986 visits to schools.

The resources of the state, the departments, the communes, and the contributions paid by parents, combine to insure the creation and maintenance of the school. Every commune must provide a school-house and residence for the school-master, and to the first expense of this outfit, the state contributes one third. Every teacher must have a lodging, or its equivalent in money, and a fixed salary of 200 francs, or 400 francs, (from \$40 to \$80,) according to the grade of school, in addition to the monthly fees paid by parents, and collected by the commune. If the commune refuses, or neglects to provide by tax on the property of the commune, the government imposes and collects the same. If the commune, on account of poverty or disaster to crops or depression in business, can not raise its necessary sum, the department to which it belongs must provide it, and if the revenues of the department are not sufficient to supply the deficiencies of all the communes, the deficit must be supplied by the state. In every department, the prefect and general-council, annually draw up in concert a special estimate in which the expense of primary instruction is fixed, and necessary revenue provided. In each commune, the Mayor and municipal council make a special estimate of the same kind; and at the same time fix the monthly tuition-fee to be paid by each parent.

Every department must by itself, or in concert with adjoining departments, support a Normal School, to supply the annual demand for teachers of primary schools. The sum to be expended on a Normal School, for the salaries of teachers, apparatus, and bursaries, or scholarships in aid of poor pupils, is not left with the department to fix, but is regulated by the council of public instruction. The salary of the Director is borne by the state and department combined; that of the assistant teachers by the department. The expense of the normal pupils for board is borne by themselves, unless they enjoy an exhibition or scholarship, founded by the state, department, university, commune, or by individual benevolence. The scholarships are sometimes divided so as to meet, in part, the expense of two or three pupils. In 1816, there were ninety-two Normal Schools, seventy-six of which were for the education of schoolmasters, and sixteen

for the education of schoolmistresses. To fifty-two of these schools enough land is attached to teach agriculture and horticulture.

The course of instruction in these elementary schools, embraces Moral and Religious Instruction, Reading, Writing, the elements of Arithmetic, elements of the French Language, legal system of Weights and Measures, Geography, (particularly of France,) History, (particularly of France,) Linear Drawing, and Singing. In the superior primary schools, or High School, the above course is extended so as to embrace Modern Languages, Book-keeping, Perspective Drawing, Chemistry, and the Mathematics, in their application to the arts. There is a special course of instruction open in evening schools, to those children and youth who can not attend the day school; and in evening classes for adults, whose early education was neglected, or who may wish to pursue particular studies connected with their pursuits as artizans, manufacturers, and master-workmen.

Provision is made to encourage teachers to form associations, and to hold frequent conferences for improvement in their professional knowledge and skill, and to found libraries of books on education.

In each department a fund is accumulating for the relief of aged teachers, and of the widows and children of teachers, who die in the exercise of their important functions. Each master must subscribe one twentieth part of the salary he receives from the commune; and the sum-total which he subscribes, together with the interest upon it, is returned to him when he retires, or to his widow and children, when he dies.

The government awards medals of silver and bronze to those masters who distinguish themselves in the management of their schools. This encourages and stimulates them to continued efforts, and connects them in an honorable way, with the government and the nation.

The whole charge to the State of the department of public instruction, according to the Budget of 1838, was 19,005,673 francs, or nearly \$4,000,000, which was distributed as follows:

	France.
Central Administration, . . . . .	686,623
General Services, . . . . .	238,000
Department and Academic Administration, . . . . .	919,900
Superior Instruction, faculties, . . . . .	1,972,050
Secondary Instruction, . . . . .	1,655,600
Elementary Instruction, general fund, . . . . .	1,600,000
do. do. additional, . . . . .	3,500,000
Primary Normal School, . . . . .	200,000
Literary and Scientific establishments, . . . . .	7,676,500
Subscriptions to Literary Works, &c. . . . .	557,000
Total, . . . . .	19,005,673
	or \$3,800,354.

This does not include the sum to be raised in the departments and communes, or contributed by parents.

From the reports of the Minister of Public Instruction, for 1843, it appears that in the ten years, from 1833 to 1843, France expended the sum of £2,565,883 (about \$11,000,000.) on the erection of school-houses, and residences for teachers. In 1843, the expenditure for the current expenses of her educational establishments was a little short of \$4,000,000, independent of the sum paid by the communes, individuals, and parents in school fees, which amount to near \$5,000,000. Even this sum was found insufficient, and since that date the appropriation has been increased. In 1833 there was one person in every eighteen of the population, receiving education, while in 1843, there was one in every ten. But the primary schools are far from reaching the excellence which characterizes the ele-



mentary schools of Germany. Much is yet to be done to carry out the liberal provision of the law.

In a late Report, (1849,) on the state of common school instruction in Germany, to the President of the Society for Elementary Instruction in France, by A. Hennequin, late inspecteur d'academie, the following five questions are all answered in the affirmative, by the author:

Is the inspection of schools better practised in Germany than in France?

Are the common schools in Germany superior to ours?

Are the people in Germany better instructed than in France?

Are the German teachers superior to the French teachers?

Are the methods of instruction in Germany better than ours?

A volume of 756 pages was published at Breslau, in 1848, by L. Hahn, on the schools and school-system of France. The author has resided many years in Paris, as a teacher, and has had access to the latest official information. Although much has been done since 1833, to improve the primary schools, the author thinks that their condition in respect to school-houses, attendance of children, universality and quality of instruction given, and the qualifications, social and pecuniary position of the teachers, is far behind that of the same grade of schools in Germany. The Normal Schools are accomplishing much good, but they have not been able yet to supply a majority of the communes with well-trained teachers. The Normal Schools at Versailles, and Strasbourg, are pronounced the best in France, and the latter especially, is regarded as making the nearest approach to the best teachers' seminaries in Germany.

The following tables will exhibit the working of this great system of public instruction in several important particulars.

TABLE I.

EXHIBITING THE NUMBER OF SCHOOLS ENRAGED IN THE UNIVERSITY OF FRANCE IN 1837.

Academies.	Departments	Royal Colleges	Professors.	Internal Students.	External Students.	Communal Colleges.	Institutions	Besetting Schools.	Normal Schools.	Primary Schools.
Aix, . . . . .	4	1	14	160	230	16	5	41	2	1,659
Amiens, . . . . .	3	1	12	121	180	10	2	50	2	2,697
Angers, . . . . .	3	1	12	118	110	18	1	17	2	1,212
Besancon, . . . . .	3	1	12	110	160	15	2	21	—	1,671
Bordeaux, . . . . .	3	1	13	170	120	7	5	54	2	1,209
Bourges, . . . . .	3	1	12	129	120	9	1	21	1	532
Caen, . . . . .	3	1	15	212	290	16	1	25	3	2,340
Cahors, . . . . .	3	2	22	90	160	9	1	47	2	1,451
Clermont, . . . . .	4	3	42	287	292	12	—	30	4	1,121
Dijon, . . . . .	3	1	13	88	150	20	—	36	2	1,855
Donai, . . . . .	2	1	12	131	110	21	6	43	1	2,643
Grenoble, . . . . .	3	1	14	133	141	7	4	25	2	1,120
Limoges, . . . . .	3	1	11	88	220	9	5	18	3	264
Lyons, . . . . .	3	1	20	276	264	6	10	52	3	1,470
Metz, . . . . .	2	1	15	190	240	5	1	26	2	1,541
Montpellier, . . . . .	4	2	23	199	256	17	2	36	—	1,766
Nancy, . . . . .	3	1	14	110	260	15	—	25	3	2,444
Nimes, . . . . .	4	3	39	365	226	10	2	26	4	1,594
Orleans, . . . . .	3	2	24	241	286	5	3	31	2	730
Paris, . . . . .	7	7	180	1629	3324	19	77	251	5	4,203
Pau, . . . . .	3	1	12	57	90	10	1	32	—	1,734
Poitiers, . . . . .	4	1	15	130	201	14	4	34	1	1,536
Rennes, . . . . .	5	3	33	346	407	18	3	35	2	941
Rouen, . . . . .	2	1	17	164	491	9	3	68	2	1,712
Strasbourg, . . . . .	2	1	14	121	203	12	1	15	2	1,543
Toulouse, . . . . .	4	1	15	112	239	9	6	55	2	1,327
Total, . . . . .	86	41	626	5779	8870	318	146	1114	54	42,318



TABLE II.

SHOWING THE CONDITION OF PRIMARY EDUCATION IN THE DIFFERENT COMMUNES, IN 1843.

Number of arrondissements . . . . .	363
Number of communes . . . . .	37,038
Population . . . . .	34,230,178
Number of communes provided with a primary school . . . . .	34,578
Population of the communes provided with primary schools . . . . .	33,080,003
Number of communes not yet provided with a primary school . . . . .	2,460
Population of the communes not yet provided with primary schools . . . . .	1,150,176
Number of communes who require several primary schools, and who possess only one . . . . .	23
Number of communes who are required by law to support one superior primary school . . . . .	290
Number of communes who ought to support superior primary schools, and who do support them . . . . .	222
Population of these communes . . . . .	4,177,047
Number of communes who ought to support several superior primary schools, and who support only one . . . . .	23
Number of communes who are not required by law to support a superior primary school, and who do support one . . . . .	103
Total number of primary schools, elementary and superior, for boys and girls, established in France in 1843 . . . . .	59,838
Total number of primary schools in the 86 departments of France, visited in 1843 by the 87 inspectors and 113 sub-inspectors . . . . .	50,936

In addition to these schools for the youth there ought to be added 6,434 classes for the laborers, which are conducted by the primary school teachers in the evenings, after the day's work, or on the Sunday, and in which 95,064 adult laborers received instruction in 1843; and also a great number of infant schools which have been recently opened in the departments, and which are receiving great encouragement and attention from the Government.

TABLE III.

SHOWING THE NUMBER OF PRIMARY SCHOOLS BELONGING TO THE DIFFERENT SECTS.

Primary schools specially set apart for the Roman Catholics	Public schools	Boys	33 207	40,867	56,812
		Girls	7,660		
	Private schools	Boys	7,098	15,945	
		Girls	8,847		
Primary schools specially set apart for the Protestants . .	Public schools	Boys	702	761	1,080
		Girls	59		
	Private schools	Boys	163	39	
		Girls	156		
Primary schools specially set apart for the Jews . . . . .	Public schools	Boys	33	37	115
		Girls	4		
	Private schools	Boys	74	78	
		Girls	4		
Mixed schools open for all three sects .	Public schools	Boys	948	1,055	1,831
		Girls	107		
	Private schools	Boys	326	776	
		Girls	450		
Total number of Primary Schools in France, in 1843, . .					59,838

The number of the Roman Catholic population of France being 33,050,178, it follows, (see Table I.,) that in 1843, there was one primary school for every 581 Roman Catholics.

The number of the Protestant population of France being 1,000,000, it follows, that in 1843, there was one primary school for every 1,018 Protestants. The reason why the proportion of schools for the Protestants to their numbers is so small is, that very many of this sect attend the mixed schools.

The number of Jews being 80,000, it follows, that there was one school for every 635 Jews.

TABLE IV.

SHOWING THE NUMBER OF CHILDREN IN ATTENDANCE AT THE PRIMARY SCHOOLS OF FRANCE, IN 1843.			
Number of Scholars at the Public Elementary Primary Schools for Boys,			
Directed by Lay Schoolmasters, . . . . .	1,699,586	}	1,857,017
“ “ Schoolmasters, members of Religious Societies, . . . . .	157,431		
Number of Scholars at the Public Superior Primary Schools for Boys,			
Directed by Lay Schoolmasters, . . . . .	15,092	}	15,448
“ “ Schoolmasters, members of Religious Societies, . . . . .	356		
Number of Scholars at the Public Schools for Girls,			
Directed by Lay Schoolmistresses, . . . . .	230,313	}	534,960
“ “ Schoolmistresses, members of Religious Societies, . . . . .	304,747		
Number of Scholars at the Private Elementary Primary Schools for Boys,			
Directed by Lay Schoolmasters, . . . . .	230,383	}	272,935
“ “ Schoolmasters, members of Religious Societies, . . . . .	42,552		
Number of Scholars at the Private Superior Primary Schools for Boys,			
Directed by Lay Schoolmasters, . . . . .	3,469	}	4,272
“ “ Schoolmasters, members of Religious Societies, . . . . .	803		
Number of Scholars at the Private Primary Schools for Girls,			
Directed by Lay Schoolmistresses, . . . . .	278,637	}	479,665
“ “ Schoolmistresses, members of Religious Societies, . . . . .	201,028		
Total number of Scholars at all the Primary Schools,			
Directed by Lay Schoolmasters or Schoolmistresses, . . . . .	2,457,380	}	3,164,297
“ “ Schoolmasters or Schoolmistresses, members of Religious Societies, . . . . .	706,917		
Total number of children attending the Primary Schools in 1843,			3,164,297
Total number of children admitted gratuitously into the Communal Schools in 1843, . . . . .			763,820
Total number of children who paid something monthly for their education in 1843, . . . . .			2,400,447

TABLE V.

SHOWING THE NUMBER AND CONDITION OF THE CLASSES FOR ADULTS, FOR YOUNG GIRLS,  
AND FOR YOUNG APPRENTICES IN FRANCE. IN 1843.

Number of classes for Adults, . . . . .		6,434	
"    "    "    Young Girls, . . . . .		160	
"    "    "    Apprentices, . . . . .		36	
Number of Infant Schools, . . . . .			
Public, . . . . .	685		
Private, . . . . .	804		1,489
Number of Scholars, . . . . .			
In the classes for Adults, . . . . .	95,064		
"    "    Young Girls, . . . . .	5,908		
"    Schools for Apprentices, . . . . .	1,268		108,432
"    Infant Schools, . . . . .	96,192		
Number of communes in which there are Adult Classes, .	6,043		
Number of Adult Classes, . . . . .			
for Men, . . . . .			6,266
"    Women, . . . . .			168
Number of persons who frequent them, . . . . .			
for Men, . . . . .			9,451
"    Women, . . . . .			4,613
Number of Classes directed by . . . . .			
Schoolmasters belonging to a Religious Society, . . . . .			125
Schoolmistresses, " " " " . . . . .			51
Number of Adult Classes in which are taught . . . . .			
Moral and Religious Instruction, . . . . .			3,331
Reading, . . . . .			5,035
Writing, . . . . .			4,483
Arithmetic, . . . . .			4,456
System of Weights and Measures, . . . . .			3,857
Linear Drawing, . . . . .			271
Vocal Music, . . . . .			107
Resources of these Classes, . . . . .			
Sums furnished by the Communes, . . . . .	136,836		
"    "    "    Departments, . . . . .	38,350		France, 201,886
"    "    "    State, . . . . .	26,700		

TABLE VI

SHOWING THE NUMBER AND COURSE OF INSTRUCTION IN THE NORMAL SCHOOLS OF  
FRANCE, IN 1843.

Number of Normal Schools thoroughly organized,	78
Number to which a garden is joined for the purpose of teaching the pupils the culture of trees,	52
Number of Professors in these schools,	495
"    including the Directors,	573
Number of hours devoted weekly to the different branches of education:	
Moral and Religious Instruction	1st Year. 2d Year. 3d Year.
Reading,	2½ 3 2
Writing,	4½ 4 4
Study of the French Language,	6 5½ 4½
History and Geography,	3½ 4½ 3½
Arithmetic,	5 3½ 3
Use of the Globes,	2 2½ 2
Elements of Practical Geometry,	4 3½ 3½
Elements of Physics and Natural History,	2½ 2½ 3½
"    Mechanics,	2 2½ 3
"    Surveying,	2 2½ 3
Linear Drawing,	3½ 4 4½
Methods of teaching,	1½ 1½ 2½
Vocal Music,	3½ 3½ 3½
Civil Law,	2 1½ 1½
Culture of Trees,	1 1½ 1½

TABLE VII.

SHOWING THE STATE OF SECONDARY EDUCATION IN 1843.

Number of Colleges. Royal, : : : : : 46 }	358
“ “ Communal, : : : : : 312 }	
Number of Scholars in Colleges . . . . .	44,091
Number of Institutions of Secondary Education, : : : : .	102
“ Boarding Schools “ “ : : : : .	914
“ Private Establishments “ “ : : : : .	1,016
“ Public and Private “ “ : : : : .	2,390
Number of Scholars in the Institutions which follow the course of a College, . . . . . 6,066 }	31,316
Number of Scholars in the Institutions which do not follow the course of a College, . . . . . 25,250 }	
Number of Secondary Pupils, . . . . .	69,341
Population of the Departments, 1843, . . . . .	34,194,875
Proportion in each Department between the population and the total number of establishments of Secondary Education, . . . . . 1 estab. for 24,887	
Number of Scholars in establishments of Secondary Education, . . . . . 1 “ “ 493	
Number of Young Men between eight and eighteen in each Department, . . . . .	3,182,397
Proportion between the total number of Young Men between eight and eighteen, and the total number of pupils in Secondary Establishments in each Department, . . . . . 1 school for 45 young men.	

## CONDITION OF PRIMARY INSTRUCTION

IN THE

DEPARTMENT OF TARN, DURING THE SCHOOL YEAR 1849-50.

THE most satisfactory insight into the practical working and actual results of a school system, can be obtained, not by looking to any general summary applicable to the whole State, but to the operations in detail, of a particular school, or of the schools of a neighborhood, or of some of the larger and yet subordinate divisions of the State. For this purpose we select for publication a report on the condition of primary education, by M. A. Domergue, the governmental inspector for the department of Tarn—one of the 86 territorial and civil divisions of the State. Tarn belongs to the old province of Languedoc, and in 1852 had a population of 363,000, distributed through 4 arrondissements, 35 cantons, and 315 communes. In 1828, when M. Charles Dupin projected his intellectual map of France, the department of Tarn was represented by a black spot, to indicate its low state as to schools and education. The report does not cover the whole ground, but shows the progress which has been made in one of the most backward portions of France since the new system went into operation.

Primary instruction includes the elementary and superior, the communal and private schools. Some of these are attended exclusively by boys, some by girls, and some by infants, while others are *common*\* schools; that is, attended by both boys and girls. There are also classes for adults, a primary normal school for masters, and another for schoolmistresses.

### BOYS' SCHOOLS.

There are altogether in the *department* 309 communal and 40 private schools. This gives a total increase of 8 schools over the year 1848. But there have been at the same time an increase of communal and a decrease of private schools. This result is doubly advantageous; for, with few exceptions, the public schools are superior to private schools, both as regards instruction and discipline.

With respect to the *mode of instruction*, the 349 boys' schools are thus divided:—Schools directed according to the mutual mode, 12; simultaneous, 261; individual, 21; mixed† mode, 55; total, 349. This last mode is the best that can be employed in the schools which have more than 50 pupils; it demands, on the part of the master, indefatigable zeal, but it gives, in exchange, most beneficial results.

There are 314 schools exclusively devoted to Roman Catholics, and 18 to Protestants, whilst 17 schools receive children belonging to both. The directors of these 17 schools are all Roman Catholics.

*Civil State of the Teachers.*—Of the 349 instructors, 336 are laymen, and 13 belong to religious societies. There are also employed in the schools 49 assistant-brothers. Of the 336 lay teachers, 117 are bachelors, 196 are married, and 23 are widowers.

\*Schools where boys and girls are taught together, are generally termed in this country *mixed schools*. Common schools are *public schools* in our school nomenclature.

†This is a combination of the *mutual* and the *simultaneous*.

*Number of Pupils, &c.*—The communal schools receive 11,882 boys; the private schools, 1,981; in all, 13,863. If to this number we add 217 boys who attend the *common schools*, we shall have a total of 14,080 boys, thus showing an increase of 807 over the year 1848.

Besides the 13,863 boys admitted into the 349 schools, there are also taught, by the masters of the common schools, 1,234 girls.

Of the 14,080 boys, 7,943 pay a school fee, which varies from fivepence to twenty pence a month; 6,137 are instructed gratuitously. The number of gratuitous pupils it is hoped will increase; for the 24th article of the law of the 13th March, 1850, states that "*primary instruction ought to be given gratuitously to all children of those families who are not in a condition to pay for such instruction.*"

*Moral and Political Conduct of the Teachers.*—The conduct of our instructors is generally very good. With some exceptions, happily few in number, they have all learned that they ought to confine themselves exclusively to the discharge of the duties belonging to their profession, and not to engage in political or municipal discussions.

We can not speak so satisfactorily of the capacity of our teachers. Besides those who have been educated at the Normal School, and whose schools are of a superior order, there are a hundred instructors who were *brevetted* immediately after the promulgation of the law of June 28th, 1833. These know, in general, very little; they are ignorant of good methods of teaching, and their schools are conducted with little order and regularity. But they have rendered services, and although they are not at the top of their profession, yet it would be unjust to hurry on their superannuation.\* The law which assures to instructors a minimum salary of 600 francs (\$125,) will enable us to demand of them more zeal and assiduity. They will not require to seek, in labors foreign to their profession, an increase of pay to assure the daily existence of themselves and their families. But 19-20ths of the instructors of this department will not be able to claim more than the fixed minimum allowance. It is to be regretted that we can not, by means of salaries increasing progressively in proportion to the services performed, excite the emulation of teachers and establish a system of promotion advantageous to the cause of education.

#### GIRLS' SCHOOLS.

There are in the department 54 communal and 163 private schoolmistresses. The increase on 1848 is 18 in number.

The communal schools receive 3,669, and the private schools 5,062 pupils; in all 9,331. When compared with the numbers attending school in 1848, there is a decrease of 151 pupils. If we add to the above number 1,234 girls who are taught in the common schools, we shall have a total number of 10,565 girls receiving elementary instruction.

Of the 9,331 who are taught by schoolmistresses, 6,674 pay, and 2,657 are educated gratuitously.

Of the 1,234 who attend the common schools,† 941 pay, and 293 receive gratuitous instruction.

The communal masters alone receive pupils who pay nothing; the private teachers receive none. All the schoolmistresses, on the contrary, whether communal or private, admit gratuitously a great number of children.

There is no need to direct your attention to the fact, that the zeal and the devotion of our schoolmistresses are not sufficiently recompensed. Every one is fully convinced of the salutary influence which the education of females exercises upon the morality of a country. We ought, therefore, to find some means of properly rewarding our schoolmistresses for the eminent services which they have rendered. It is necessary, above all, to encourage the establishment of girls' schools, in order to diminish, as much as possible, the number of *mixed schools*, which, in spite of the most careful superintendence, present results most unfavorable. As a proof of the low estimation in which these *mixed schools* are held, take the following facts:—In those *communes* which possess a *girls' school*, the mean number of

\* By a recent law a retiring pension is granted to teachers in proportion to their length of service.

† These common or mixed schools are conducted by *masters*.

pupils attending is 64 per commune; whereas, in the communes having no girls' school, but, on the contrary, a boys' school open to girls, the mean number is reduced to nine.

There are 189 communes entirely without schoolmistresses; that is to say, in 189 communes of the department the girls are either wholly deprived of instruction, or receive an education which, from being given by a man, is not at all in harmony with the duties imposed upon the sex by society.

From these considerations, I have the honor of proposing to you to ask of the general council the sum of 2000 francs, to be appropriated thus—1000 francs among private schoolmistresses, many of whom find it difficult to live, and 1000 francs to be divided among the poorest of the communes which shall make sacrifices to establish communal schools for girls.\*

*Children attending the Schools.*—Out of 1000 inhabitants, 68 children, on an average, attend the primary schools. In 1839, there were only 55 out of 1000; the progress, then, is real. We are, however, below the average which, for the whole of France, is about 92 in 1000; while some of the departments, such as that of Doubs, count 176 pupils out of every 1000 inhabitants. The number of children between 6 and 14 years of age, who do not actually attend the primary schools, may be reckoned at 20,000. Many of these have already left school, carrying with them notions the most imperfect, which they will very soon completely forget. The great majority are condemned to absolute ignorance.

*School Houses.*—The law of 28th June, 1833, compels communes to provide suitable buildings which shall serve both as school-rooms for the children, and dwelling-houses for the masters. The law of 15th March, 1850, has preserved this obligation. Communes are also advised to become the owners of school-houses; and in 1848 they possessed 86 school-houses, while at the present day they have 99. About 15 new school-houses may be reckoned which shall be completed during the next year. Every where, in the course of my inspection, I have ascertained that *the places rented by the communes to serve as schools and teachers' residences are unhealthy, badly ventilated, insufficiently lighted, inconvenient, and inadequate; whilst some are in a completely dilapidated condition.*

*Purchase of Books for the Poor.*—Rural schools are entirely without good books. Poverty prevents many parents from purchasing such books as are necessary for their children, or it makes them select, not those which the teacher indicates to them, but those which itinerant booksellers sell them at a very small cost. Serious inconveniences result from this state of things. I believe that it is necessary to provide in the budget a grant of 500 francs for the purchase of books for poor scholars.

*Assistance to Old and Infirm Teachers.*—The aged instructors have spent their strength in the career of primary instruction—an office, up to the present time, so badly remunerated. They are now worn out, and will suffer all the horrors of poverty, unless the department render them assistance. I solicit for them an allowance of 500 francs. This sum will annually diminish, and, finally, will disappear from the departmental budget; since the new law in reference to education assures to instructors a retiring pension in proportion to a duration of their services.

*Infant Schools.*—The department contains 9 infant schools for boys and girls, containing a total of 1001 children.

*Normal School.*—The excellent condition of this establishment continues to deserve the praises which have been bestowed on it by the general council of the department, the academic authorities, and the general Inspectors of the University.

The satisfactory results which it is permitted me to state, are owing to the unbounded devotion and untiring zeal of the director of the school; to the strict discipline which he maintains with vigor; to his constant presence at all the exercises of the house; to the religious punctuality which is every where manifest, and which is the best precept on order and regularity which it is possible to give to our future instructors.

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\* Every commune is obliged by law to support at least one primary school, either of its own, or in conjunction with neighboring communes.



The normal school has rendered immense service to the country : it has given us our best instructors ; it has raised, to a considerable extent, the love of popular instruction ; thanks to it, above all, should M. Charles Dupin trace out again the intellectual map of France, we shall behold the *black spot* disappear by which the illustrious statistician had stigmatized the department of Tarn.

Since 1833 the normal school has produced 174 instructors ; of these 120 are communal teachers, and 9 are about to become so ; 1 is assistant master in the normal school ; 3 are private instructors ; 27 have left the profession ; 14 have died in the exercise of their duties ; total 174 who have obtained their *brevet* on leaving the school.

The teachers who have come from the normal school are infinitely superior to their colleagues. They are superior by their capacity—by their faithful observances of rules—and, almost always, by their zeal, and by their conduct towards the local authorities and the heads of families. In the course of my inspections, I have been constantly struck with the marked difference which exists between the teachers who have been educated at a normal school and those who have not been in any special way prepared for the duties of instruction. People partake of my convictions, in this respect ; and normal students are always chosen, in preference to other candidates, by local committees and municipal councils.

*Normal School for Females.*—The opinion which I have formerly expressed of the importance which I attach to the good education of girls, will, I trust, be sufficient to make you appreciate the strong desire which I have for the continuance of exhibitions for female candidates. The normal school is in excellent condition, and the results obtained are satisfactory. At the last examination, out of 13 who presented themselves, 3 were *breveted* with the numbers 2, 4, and 6.

Such is a faithful and impartial account of the state of primary instruction in the department of Tarn. I have endeavored to give, by figures obtained from authentic sources, the results due to the law of 28th June, 1833, and at the same time to establish the starting-point of the law of 15th March, 1850 ; so that it may be easy, at a later period, to estimate the benefits which the department may have derived from it.

#### IV. SCHOOLS AND INSTITUTIONS

##### SPECIAL INSTRUCTION IN FRANCE.

In addition to the regular institutions for primary, secondary, and superior instruction, which belong to the supervision of the Minister of Public Instruction, there are a number of schools of the class preparatory for the pursuits of life, which are assigned by law to other departments of the government. The Polytechnic School, the Military School of St. Cyr, and the Military College of Fleche, are assigned to the Minister of War; the School of Roads and Bridges, the two Schools of Mines, one at Paris and the other at St. Etienne, to the Minister of Public Works; the Model Farm Schools, the District Schools of Agriculture, and the National Agronomic Institute at Versailles, the School of Arts and Manufactures at Paris, Châlons, Angers, and Aix, to the Minister of Agriculture and Commerce; the Naval Schools at Brest and L'Orient, to the Minister of the Marine; the Conservatory of Arts and Manufactures, and of Music, to the Minister of the Interior. These schools properly belong to the division of superior instruction, which is not embraced, except in a general view, in the plan of this Report, but as they are intended to complete the course of studies begun in the higher schools and academies of our systems of public instruction, and as they furnish useful hints, both as to studies and their applications, for similar institutions in this country, whether public or private, an account of several of the most important of this class, will be given.

France is better supplied with schools of special instruction and voluntary and incorporated societies for the promotion of literature, science, and the arts, as well as with various forms of active philanthropy, than any other country in Europe. The stimulus given to the universal mind of France, by the political revolutions which have changed the whole face of modern society, while it has made elementary education more general and active, has also given progress to higher studies, and great scientific undertakings.

In addition to 36 learned societies in Paris, recognized and aided by governmental grants—besides a multitude of others unchartered and but little known either to one another, or the public—there were in 1851, in the departments of France 189 learned societies, besides twelve archeological commissions, seventy-eight agricultural associations, and seven hundred commercial societies, to promote the application of science to industry. These associations generally feel the impulse described by Lamartine in his address to his colleagues of the Academy of Literature and Science at Maçon: "You have felt, gentlemen, that knowledge is

yours only on the condition that you diffuse it; and to raise the low, is to elevate the high. Around you all is progressing. Will you stand alone? Will you suffer yourselves to be overtaken? No; men of leisure or rather workmen—workmen of thought and science, it is for us to be the first to participate in the movement. In a state of civilization where intelligence gives power, rank is maintained only by the maintenance of moral superiority; when the intellectual order is deranged, disorder is not far off.”

There were in 1850, one hundred and sixty-six towns in France, in which there were public libraries, containing 5,510,295 volumes; of these libraries, one hundred and nine contained over 10,000 volumes each.

The following summary of the grants comprised in the French Budget of 1847, as voted by the chambers, exhibits the comprehensive character of the aid extended by the government to educational, literary, scientific, and artistic purposes.

*A.—In the Department of Public Instruction.*

I. Central Administration and to aid institutions of special instruction, such as schools for idiots, the blind deaf mutes, &c., . . . . .	\$112,000
II. University of France—including schools of primary, secondary, and superior education, . . . . .	2,800,000
III. Literature and science—including libraries in Paris and the provinces, museums of natural history, the institute of France, &c., . . . . .	600,000

*B.—In the Department of the Interior.*

Schools of design, and the fine arts, . . . . .	450,000
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*C.—In the Department of Public Works.*

Buildings connected with science, and the arts, . . . . .	100,000
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\$4,062,000

The above sum is exclusive of special grants in aid of schools of agriculture, commerce, and manufactures, or of charitable institutions in which agricultural and mechanical instruction was given, or of expenditures for the galleries of the Louvre, Luxembourg, and Versailles; amounting to at least another million.

The following survey of the Industrial Instruction of France is abridged from an article in the *Revue des deux mondes*, for 1851, by A. Amphori, entitled, “The intellectual movement among the working classes.”

In the scheme of institutions devoted to this special instruction, the first rank belong to the conservatory of arts and trades at Paris. This great establishment performs a twofold duty; it collects models, designs or descriptions of machines, instruments, apparatus, and mechanical tools, and gives public lessons upon the mathematical and physical sciences as applied in the arts. The first idea of the conservatory was conceived in the reign of Louis XVI., by a famous mechanic, who seemed to have even drawn from the very sources of life, wherewith to gift his marvellous mechanisms. The idea of Vaucanson, legislated upon in the year III. of (1794,) the revolutionary era, was not realized until the year VI. (1796.) Since that time, the conservatory has followed the developments of the national industry,

and its methods of action have been increased in number, with reference to its double purpose. It now includes four departments; the collections of machines, &c., a technological library, a department for higher instruction, and a small practical elementary school.\*

The galleries filled with precious material treasures, form what may be called the archives of the industrial arts. These collections are annually increased, and now fill thirteen galleries.

The department of higher instruction was established about the commencement of the restoration. Up to 1817, there had been at the conservatory only a designer and three demonstrators, who gave advice and explanations to those who come to ask for them. These accommodations, however, remained nearly useless to the public. The regular courses were of more value, as also were those commenced in 1819, upon geometry applied to the arts, industrial chemistry, and industrial economy. Besides these three chairs, others were erected, under the government of July, of industrial mechanics, descriptive geometry, chemistry applied to the arts, industrial legislation, agriculture, and the ceramic arts. The situation of the institution in the midst of a populous neighborhood, furnishes to its lectures an auditory composed chiefly of working men. It is the merit of these lectures, that they are clear, simple, intelligible to all, and susceptible of immediate practical application. Theory is explained in close contact with practice. The workmen, eager to learn, crowd to these lessons; they hasten thither from the workshops every evening. A most favorable indication is given by the admirable order which reigns throughout this audience in blouses, bestowed in an immense amphitheater, and often overcrowded. Every one is silent and attentive. There is no instance there of the indecorums so frequent in institutions giving a higher order of instruction.

The library of the conservatory of arts and trades is appropriated to the members of the institution. It is distinguished by a fine collection of French and foreign scientific works; and contains much which may afford valuable information to practical men in the various branches of industrial art. The lower school, founded under the empire, may be regarded as a primary school of explained labor, (*industrie raisonnée*.) Its three courses, of descriptive and elementary geometry, of mechanical and architectural design, and of industrial design, are attended by from a hundred and fifty to two hundred pupils.

The conservatory of arts and trades, as at present constituted, contains very valuable elements of industrial instruction. Workmen, foremen, chiefs of establishments, children of mechanics and laborers, come thither to obtain an instruction which shall enlighten their career of labor.

The three schools of arts and trades, at Châlons, Angers, and Aix, dependent, like the conservatory, directly upon the State, are devoted more especially to practical instruction. The eldest, that at Châlons, established for a little while at Compiègne, was erected by a decree of the consular government of the year XI. The second, created in 1811, was placed by the imperial government at Beaupréau, in the middle of La Vendée, to become a new center of activity for that ignorant neighborhood. The third dates only from 1843. The schools of arts and trades are intended to train skillful workmen. Each of them is divided into four workshops; the blacksmiths', the foundry, the finishers', and the carpenters'. To the three establishments of Châlons, Angers, and Aix, are appropriated for 1851, \$200,200; but deduct from this the sums received by paying scholars, and from the sale of articles manufactured, and the net expense to the treasury amounts only to about \$120,000.

Official estimates show that more than half the pupils leaving go into business, as finishers, founders, blacksmiths, machinists, or carpenters. And numbers of the others are employed in the department of roads and bridges, as overseers or conductors; draftsmen in machine shops, or as architects. The schools of arts and bridges also contribute a remarkably large proportion of the machinists, &c., for the public steamers. Thus, within the last seven years, have been employed more than a hundred graduates of these schools, as foremen or firemen. As to the proportions of theory and practice in the instruction, it is enough to say that

\* The appropriation to the conservatory in 1851, was \$30,000; \$18,168 for salaries, and the remainder for other purposes.

the pupils pass seven hours and a half daily in the workshops, and only five hours and a half daily in classes and in the apartments for design. The professors are rigorously obliged, in their lessons, to take the most usual point of view; that from which the pupil can best see how to use the knowledge he acquires. Since the vote was substituted for ministerial selection of professors, two years since, the courses of instruction have been so arranged as to drop out those theoretical gentlemen who are unable to do what they teach.

The principal advantage of these schools is not, in our opinion, the direct influence which they exert upon the national industry. The two hundred and fifty pupils or thereabout who leave them every year, are scarcely the thousandth part of the workmen who grow up in France during the same time; but the schools show a style of instruction which serves as a model for comparison. The pupils carry into private workshops theoretical knowledge which they could not acquire there, and which is most useful in the explanation of practical labor. Although yet imperfect workmen, they improve more rapidly than the others, and sooner become excellent foremen. Although we know that among some foreign nations, habits supply the place of institutions, among us, these schools will stimulate a little our untoward habits. They have another destination, of higher importance; they may become seminaries of professors for the industrial instruction which the country waits to see organized, and for which we are now endeavoring to prepare a way. Once improved by the practical training of the private workshops and manufactories, the best pupils of these schools will become most useful in the development of this special instruction; which needs a body of instructors adapted to its peculiar needs.

An institution established at Paris, the central school of arts and manufactures, also helps the accomplishment of this same work. The similar nature of its instructions alone justifies the assistance granted it by government, which confers upon it a sort of public character.\* During an existence of twenty years, the central school has fully justified the expectations of its founders, it is devoted to the education of civil engineers, directors of machine-shops, and chiefs of manufactories. Besides the four principal courses studied, the mechanic arts, the chemical arts, metallurgy and architecture, it instructs its pupils in all the pursuits of industrial labor. Since chemistry has left laboratories to enter workshops and to perfect there the results of manufacturing processes; since the physical world has been searched for the means of employing heat and steam, which have become such powerful agents of production, industry has ceased to be abandoned to empiricism. Every manufacture has asked from science methods quicker, surer, and more economical. The central school satisfies this demand. By physical and chemical study, it prepares pupils expressly for the direction of industrial labor, just as the polytechnic school, by the study of mathematical science, becomes a seminary for the department of public works, and for some other special professions.

Under these institutions, which have a general character, may be ranked those institutions which we will term local. These may be divided, in respect to their destination, into two great classes; one, consisting of those whose design is to instruct in the applications of some one science to the industrial arts; and the other, of those which confine their instruction to the practice of an art or trade; or to the collateral knowledge necessary to exercise it. To estimate the actual influence of both, they must be considered in the place where they exist.

In the northern section, where manufacturing industry reigns supreme, we see only the arts of design as applied to arts and trades, gratuitously taught. The schools of design established in most of the important towns, are generally of recent creation. The oldest date from the restoration or from the empire, except that three or four, have an earlier origin. For instance, the school of Arras, where some instruction is given, which relates partly to industrial occupations, was founded by the states-general of Artois, in 1775; that of St. Omer in 1780, and that of Calais in 1787. These institutions are every where much valued among the working classes. Some of them contain classes of as many as a hundred and fifty pupils. Some of them are particularly for children, but most for adults.

\* The State allows the central school an annual sum of \$6,000, which is distributed to candidates (for prizes) by a vote.

Architectural design and practical geometry, as applied to cutting stone, wood, &c., are often among the studies. In all that populous district which extends from the Belgian frontier to the western extremity of Normandy, and contains such manufacturing metropolises as Rouen and Lille, there are only two small institutions which really have the character of industrial schools. One is at Dieppe; it is a school for lace-making and open-stitch for young girls. It was founded during the restoration, and increased during the government of July. It receives about three hundred pupils, and while giving them a primary school course of instruction, it also instructs them in an occupation. It has exercised a favorable influence upon the lace manufacture; there has been organized in connection with it, a boarding department, where some poor girls are supported gratuitously, and educated to become skillful work-women and assistant teachers. The other institutions situated at Mesnières, in the *arrondissement* of Rouen, receives about sixty orphan boys, and trains them, for business in workshops appropriate for different trades. Some local societies, as the society of workmen at St. Quentin, &c., endeavor to instruct the laboring classes in some occupations.

In our eastern departments, the domain of industrial instruction is less confined. There are there some schools, some technic institutions, for the working classes. The schools of design are more numerous than in the north, and are more decidedly directed towards manufactures. The manufacturers of Switzerland, Germany, and England, have more than once had upon their fabrics the marks of the designers, engravers, and colorists, trained in the gratuitous schools of the Haut-Rhin. Some schools of design of rather wider scope, do great service to industry. Among these may be especially mentioned the school of Saint-Etienne, where are instructed all the designers employed in the neighboring manufactories, and in particular by the ribbon-makers, who are so very jealous about the good taste of these articles of ornament. Besides instruction in design, there are given from time to time public courses of instruction, established and supported by the towns, and particularly elementary courses in chemistry, in mechanics, physics and mathematics, such as may furnish the workmen with an intelligent understanding of their profession. Among the cities which enjoy to some extent instruction of this sort, may be mentioned Metz, Mulhouse, Colmar, Bar-le-Duc, Besançon, Rheims, Nancy, Dijon, Rive-de-Gier, Langres, &c. These institutions are sometimes the results of individual effort; thus, at Besançon, a private citizen founded in 1829 a public and free course of study upon mathematics as connected with the arts. At Bar-le-Duc, industrial courses were established by an association of subscribers, and were taken charge of by the commune. Local societies, among which the industrial society at Mulhouse is first in influence and resources, have increased the local activity, and give the initiative to the population in general. In Sémur, a small town of the Côte-d'Or, a private society. Some manufacturers have imitated this example; for instance, in the great establishment of Guebwiller (Haut-Rhin) gratuitous lessons are given to the operatives in linear design, geometry, and machinery.

There are also in the east of France, several institutions devoted more exclusively to special purposes. The most important, whose regulations are worthy of most attention, are at Lyons, Strasbourg, Nancy, and Saint-Etienne. Lyons stands first, both for population and manufacturing wealth. Besides the Lamartine school, in which are given instructions in mechanics, physics, chemistry, and design, and also a course in the manufacture of cloth, a number of private institutions give practical instruction in loom-weaving, and the theory of the decomposition of cloth, (*décomposition des étoffes*); they instruct also how to set up looms after any required pattern. Instruction is also given in making patterns, in designing for woven fabrics, and in keeping accounts for workshops. These lessons, as will be observed, go to the heart of the industry of Lyons. It is only to be wished that it were more liberally dispensed; and that the city would make it gratuitous. Lyons has also schools for teaching designing of figures, stone-cutting, and several schools of design for journeymen carpenters; but it is to be regretted that payment is necessary for admission to them. Strasbourg has a well organized school of design, maintained by the commune. The practical instruction given there, besides elementary theoretic instruction in mathematical and physical science, includes iron-work at forge and vice, turning, carpentry, lithography, and chemical manipulations. In selecting the workshop for a pupil, reference is had to his tastes and aptitudes. At Nancy,



and there has been for several years established a "house for apprentices" on an entirely new plan. The results have been considered deserving of encouragement by the council-general of the department of the Meurthe. The apprentices form a family, and call one another brother. Infractions of rules are determined upon by a tribunal composed of all those apprentices who have obtained a certain number of good marks. A good mark is given by vote of all the pupils. The penalties consist of a system of reparations founded upon the nature of each fault. Thus, for one who breaks silence when silence is ordered, is condemned to keep silence until permitted to break it. If two apprentices quarrel, they must embrace and become companions at play for a set time. The pupils of this establishment labor in the workshops established in it, and attend the communal schools to receive primary instruction. At Saint-Etienne, a school of mines is intended to furnish conductors of mines, and directors of explorations and mineralogical workshops. As this instruction is gratuitous, workmen may attend the school to be taught mining. In the department of Doubs, a practical school of horology was founded in 1836, at Mont-Morteau, for the purpose of preserving and increasing the beautiful employment which is important to the labor of that section. In the leisure of winter, always so long among the mountains, the farmers, shut in so much by the snow, have no other means of occupying their time. The town of Besançon, the department, even the supreme government, had encouraged the establishment of the school at Mont-Morteau, which seemed to promise great success; but different causes having diminished the demand for the clocks from Doubs, the school, after having already done some good, was forced to be closed. Similar institutions have been unable to support themselves at Dijon and Maçon. The departments and towns ought to have afforded them a more liberal support. The same may be said of a school of another species, for mounting looms, established at Rheims by a local society, in which skillful mounters and weavers had already been trained, but which perished for lack of funds.

In this same region, at one of the most ignorant points of the department of the Meurthe, a project is being put in execution to which we wish the best success. It is intended to establish a special school for a branch of industry to which, though humble, a considerable population is confined. The inhabitants of the six communes of the ancient county of Dabo, at the foot of the Voges, which was united with France only in 1801, have no other means of gaining a living than their forest-rights in the public forests, and the execution of carefully carved wood-work. Their hereditary industry, remaining absolutely stationary, has become surpassed by other products of the same kind, and commerce gradually refuses them. The projected school is designed to instruct these unskillful turners in methods of labor more suited to existing tastes and demands. Instruction will be given in making playthings and domestic utensils, such as those made in Switzerland and in the Black Forest. In order to have some chances of success, it will be necessary to instruct the young, and not the adult workmen, whose traditional habits it would be difficult to alter. These latter, having been exclusively employed in doing coarse work, would find it very difficult to acquire delicacy of hand. With this proviso, the plan of the founders of this school appears excellent; when it has succeeded, it will be another good example of what our eastern departments can offer in the way of industrial instruction.

The southern section of France is not so favored in this respect; it presents a similar aspect to the northern. Schools of linear design of trade, architecture or decoration, existing at Marseilles, Avignon, Montauban, Digne, Aude, Grenoble, Tarbes, Grasse, &c., a few courses of instruction in three or four towns in the elements of chemistry, of physics, of mechanics, of geometry, are almost the only institutions for industrial instruction. The town of Nîmes alone is better supplied; perhaps there is not in all France another city where special instruction is given on so extended a scale. A course of design for manufactures embraces instruction in damasked and in stamped flowers. Another course of geometrical design completes the knowledge which the children have received in the elementary schools. The instruction in chemistry comprehends lessons in dyeing, an important branch of local industry. Admission to all the classes is free. A school of weaving, dating from 1836, is liberally opened for theoretic and practical instruction in the manufacture of cloths. The theory is of the processes employed both in broadened and in plain stuffs; the practice consists in the actual weaving of the cloths in the



loom. The town furnishes the tools, machines, and raw material, necessary for the work. By explaining the art of weaving in two aspects, this school has had an excellent influence upon the manufactures of Nismes. It was only necessary to endeavor to gather into it as many foremen and workmen as possible. In this same department, of the Gard, at Alais, has been established a school of master-miners. The instruction has not so high a character or purpose as that at Saint-Etienne, at least in that part of the course designed for directors of machine-shops. The practical exercises consist in drawing plans both of the surface of the ground and of the mines, and in mining in the mines of pit-coal about Alais. The pupils also practice blacksmithing, wagon-making, and carpentry. Admission is not free, and scarcely any pupils are expected except those maintained by some department, or by some of the coal companies.

In our western departments the two large cities of Bordeaux and Nantes are the only ones which have paid much attention to special instruction. In the capital of ancient Guyenne, in 1834 and 1835, the municipal council founded public and gratuitous courses of instruction in industrial chemistry, mathematics and mechanics, as applied to arts and trades. The chamber of commerce also, a rich and active body, established in 1843 a course of chemistry and natural history. A private society called the philomathic society, whose assistance has often been valuable to the laboring population of Bordeaux, has for six years defrayed the expense of special instruction; the practical part of which consists in linear design and instruction about the steam-engine. At Nantes, besides that the town maintains a free school of design, founded in 1789, there is a private society known as the industrial society, whose efforts for young workmen are now appreciated throughout France, which is at the head of the industrial training of the masses. It receives from the commune, the department, and the State, assistance which is increased by private subscriptions. The workmen are counted by hundreds, whose first steps it has guided in the rude career of labor. The object of this society is two-fold; to give its pupils instruction carefully adapted to their condition, and to arrange for their apprenticeship in different trades.

La Rochelle and Brest have also made some efforts to introduce industrial education in the west of France. At La Rochelle, was established in 1844 a theoretic course in ship-building; at Brest, a society called the society of emulation endeavors to instruct in linear design, in drawing plans, &c. In this part of France, all children, not merely of those of easy circumstances, but of all who are not altogether too poor, attend, without exception, the classical schools. They are often interrupted in their studies, by the inability of their parents to bear their prolonged expenses, and rarely succeed in reducing to practice, even at a late period, the imperfect education they receive. Families unable to send their sons to the high school, content themselves with the ordinary instruction. The idea of special instruction is scarcely a germ in this soil, which seems ungenial to it. Nowhere is the word "professional" applied to instruction in a narrower or false sense.

The center of France, excepting the department of the Seine, whose establishments deserve a distinct notice, is scarcely less ill supplied than the west. Most of the departments are destitute of graded (*sérieux*) establishments also. Schools of linear design, or of design more or less applicable to industry, exist only at great distances. There are, however, a few institutions in which some practical instruction is given. For instance, the *prytanæum* of Menars, established in 1832 in the department of the Loire and Cher, and recently reopened after having been some time shut, is devoted to industrial studies. The plan of the institution is similar to that of our schools of arts and trades, but unfortunately has not as great resources at command. The city of Tours has established a course in physics and chemistry, but it has not been organized upon a sufficiently wide basis to attract many auditors. At Limoges, the municipal council and the agricultural society, by uniting their efforts, have done much good by means of public and free lessons, in geometry, mechanics, design, modeling, and stereotomy. In the Haute-Loire, Le Puy received the gift of a free industrial school from private subscriptions, the town paying its annual expenses. This institution, though less complete than that of Strasbourg, is constructed upon the same model, and accommodates a hundred children of workmen. There are some special courses at Le Puy also; but the practical applications of science are not brought out there. In the department of

the Corrèze, though small and unkindly treated by nature, we see with pleasure, at Tulle, a free school of mechanical geometry. Linear design is applied there to the drawing of figures and of machines, to stone cutting, carpentry, and architecture.

At the other extremity of the central section, in the department of the Seine, whose riches and activity contrast singularly with the nakedness and simplicity of the country we are leaving, have been united most of the means of industrial instruction which are scattered here and there over the surface of France. Paris, nevertheless, contains nothing comparable with the school of weaving at Nismes, with the private institutions for teaching weaving at Lyons, with the national schools of arts and trades at Châlons, Angers, and Aix. We seek there in vain for an organized system of practical instruction, provided with all resources necessary to meet the public demand. All the establishments of this class in Paris, except the national conservatory of arts and trades, may be classed in two divisions; one appropriated to those in easy circumstances, or who can pay a monthly fee, the other gratuitous, and therefore accessible to the working population. In the former class are the Chaptal municipal college and the Turgot school, in both of which there is a department of industrial teaching; several schools preparatory to the school of arts and trades; schools of architecture, horology, &c. From our present point of view, the latter class calls for our especial attention. The number of public establishments included in it is inconsiderable. Besides the small school of the conservatory, there are hardly any other than free classes in industrial design. Design for woven stuffs does not occupy so prominent a place as it ought; the artistic element of design is preponderant, which will not be surprising when it is known that by a singularity of which our administration affords more than one example, these schools are altogether separate from the department of commerce, and under the direction of that of the fine arts.

In the vast field for industrial instruction among the working classes, the principal burden has fallen upon private institutions established by charity or by economic foresight. In the immense gulf of the capital, the action of these establishments does not appear to the indifferent, or to those immersed in business; but though silent and almost unknown, they are a valuable help to the unfortunate and to the helpless, and very profitable to the community. The institution for apprentices in the city of Paris, under the direction of M. Armand de Melun, trains up to labor, from the pavements of the city and from garrets and misery, a crowd of children who would otherwise have hastened to populate the prisons. While their instructors train their minds by primary instruction, and seek to inspire right sentiments into their hearts, they are gradually prepared for the actual life which awaits them. Another institution, that of Saint-Nicolas, receives several hundred pupils in two establishments, one at Paris and the other at Issy. Its judicious directors mingle a proper amount of elementary instruction with manual labor. Unfortunately the limited resources of this establishment do not permit it to furnish a very great variety of instruction. Other similar institutions are entering the same course. The work-rooms for girls are actual industrial schools for the most feeble and exposed portion of the laboring population, and that needing most care. There are also in Paris small school for apprentices, established almost entirely by the contributions of foremen for poor orphans. Such enterprises are worthy of judicious encouragement by the municipal council.

Other public and gratuitous courses of study, founded by private societies, with different designs and by different means, are assisting to disseminate technical instruction among the workmen. When a man has some property, and is thus in a way to fill a useful place in society and to gain his own living, instruction of this kind, carefully adapted to his requirements, dealing with fact rather than with theory, simple, and appealing to the good sense of the masses, is likely to produce excellent moral effects. I do not say that all these qualifications actually exist; some additions and retrenchments are necessary. The philosophic sentiment of the great task of industrial improvement for the masses is not clearly brought out; and the conditions of true practical instruction are often not fulfilled. Yet many honorable individual efforts have been made in this direction. They have produced real good, and merit effective encouragement from the Parisian municipal authority.

## V. GALLERY TRAINING LESSONS,

ORALLY CONDUCTED IN NATURAL SCIENCE AND COMMON THINGS.\*

BY DAVID STOW.

ORAL training lessons, in natural science and the arts, are found to be not merely a highly intellectual exercise, but are valuable to persons in every rank of society, whether master, servant, or workman. While they are particularly valuable to persons in the humbler walks of life, in fitting them for manual and other labor, they are also important as the foundation of a more extended knowledge of science, to those whose circumstances may enable them to prosecute their researches still further. To the former, these school exercises may be nearly all the theoretical knowledge on such subjects they can ever receive. To the latter, a thoroughly analyzed or *pictured out* training lesson, day by day, will be found an elementary exercise greatly superior to the ordinary mode of merely reading lessons or lectures, even when accompanied by explanation.

The teaching of science by gallery lessons, and conducted orally, without book, is a new and additional branch in popular education, and that it ought to form a distinct feature in schools, even for the children of the poor and working classes, will appear, when we consider the importance of servants, (male and female,) workmen, and mechanics, having a correct idea of things and of scientific terms. The workman, in consequence, would know better the meaning of relative terms, even in the drudgery of manual labor, and he might be left to execute much by a simple order scientifically expressed, which he can not now do without very close watching and superintendence; and although the mechanic must have acquired a practical knowledge of his particular profession, yet early school training in science and scientific terms would have expanded and exercised the mind of many a man, humble in rank, but of powerful intellect, so as to have produced many more James Watts, Arkwrights, and Henry Bells, than we now have, whose genius and discoveries might have enriched mankind, and added to the domestic and social comfort of all. How difficult is it to get a workman out of a beaten track, or, if he be a

\* Stow's "Training System of Education." Eleventh Edition. Chapter xxviii.

genius, to fix him in any track at all! These considerations induced me, at the earliest establishment of this system, to introduce, as the first exercise each afternoon in our model practicing school, oral training lessons on science *without book*.

It is evident, that although some points of science, from observation, reading and conversation, do force themselves upon the young mind, and may be made available when a person attends a course of public lectures in after-life, yet the fact of his knowledge having been gathered up at random, without arrangement or system, leaves him very much in the dark as to the basis on which all, or any science rests.

Had the sons of tradesmen and workmen, as well as professional men, acquired in school a clear outline of the various natural sciences—the question is, should such a sum require to have been expended on our new Houses of Parliament in regard to the proper arrangements of sound (acoustics) and healthful ventilation? also, as is now required for sanitary improvements in our rivers, and in our cities, and smaller towns throughout the kingdom? What the more learned superintendents may have overlooked, might have been suggested, no doubt, by some one or other of the intelligent humble workmen.

Visitors sometimes say, "What have the children of the poor to do with science? let them learn to read their Bibles, and repeat their Catechism; that's the education suitable for the poor." Science, however, is valuable alike to the mechanic and the man of business, in promoting the arts of life so indispensable to the wealth and comfort of all ranks of society. If the bold and clear outlines of science be given to all ranks, each may maintain his proper place in the scale of its ascension. The poor man, if he chooses, may advance beyond the limited period of his elementary school education, and the man of leisure and scientific research may rise as high as he pleases; whilst the genius, of whatever grade, acquires enough to enable him to prosecute his studies, and take his just place in society. But the trainer rises a little higher in his oral training lessons, and uses scientific terms, expressive of scientific principles, such as are used by lecturers on natural philosophy, in consequence of which, it is still urged by some, WHY TEACH SCIENCE to children in an elementary school? What can they understand of latent heat, the radii of a circle, centrifugal and centripetal forces, gravitation, electric fluid, and innumerable other more complex terms? Now we have to say, that all such terms may be simplified, and when reduced to simple terms, they can be understood by children of a few years old. Having these outlines clearly analyzed by *familiar illustrations*, so as to communicate the idea in the first instance, they can then be made to

understand the most complex terms, expressive of the most complex movements and conditions. For example, the motion of a child round the circular swinging-pole in the play-ground, may illustrate, in some measure, how the moon keeps in its orbit round the earth, and the latter, or any other planet, round the sun; in other words, what is meant by the centrifugal and centripetal forces. The proper course of education in science has too generally been reversed; and the reason why so many adults stop short in their progress, and can not educate themselves (for education ought only to close with life,) is, that they have committed to memory technical terms, which, *not having been pictured out* and illustrated, are not understood; and, also, that the minute points of science have been given before the great outlines were drawn.

The philosophical terms which a public lecturer finds it necessary to use, are seldom thoroughly understood by his audience; they have not been explained, far less pictured out to the mind's eye. They do not therefore *see* the bearing of each point of the premises laid down, or the conclusions at which the lecturer arrives, and at the close are found oftentimes to have acquired no distinct impression of the actual lesson, which otherwise might have been received. They may applaud the lecturer as being a very *clever man*. "It was an excellent lecture!" "What beautiful experiments he performed!" "How remarkably bright he made the gas to burn, and what an explosion it produced!" But the lecture itself has not been comprehended. This is the every-day experience of the young and the old in attending public lectures on natural science. It would have been otherwise after a course of early school training.

The lessons during the first stage, or the outlines, at whatever age the child commences his course, ought to be exceedingly simple, and should comprehend a number of the more obvious things in nature and in art, which every child ought to know in their great outlines, before he is perplexed with minute points, or the use of technical terms; a knowledge of which he gradually acquires as he advances from stage to stage.

As a child, I wish to know what wheaten bread and oaten bread are; the distinction in quality, and how they are made; how butter and cheese are made; what salt is; how wine is made, and of what composed; what brown and loaf sugars are; the nature of tea and coffee, with the places where they are produced, and how they are brought to the condition in which they are found when used at home at the fireside; the distinction between wool, cotton, flax, and silk, both how they are produced, and why more or less warm.

The child ought to be made acquainted with articles of furniture. These are continually presented to his notice, and they afford the means of exercising his powers of observation, and training him to think. Their nature and relative qualities ought to be made familiar to him.

The natural history of the more common animals, domestic and foreign, is also an object of interest and a means of enlargement to the young mind, particularly when united with a short history, not merely of the habits of the animals themselves, but of the countries and inhabitants in and among which Providence has placed them, and the peculiar adaptation of each to its own particular circumstances, all proving the wisdom of their great Creator. As a child, I wish to know why the swallow is not seen during winter: why the hen has open feet, and the duck webbed; with other more minute points of the formation of animals; why the butterfly is seen in the summer only; from what origin it has sprung. What are all these? the child naturally inquires, and whence do the wings of the latter derive their pearly whiteness? Of what use rats and mice are, seeing they are so troublesome in our dwellings, and why and when they may be killed, without our being chargeable with cruelty; how the foot of the reindeer is suited to the frozen regions of Lapland, that of the horse to our own, and the camel's to the sandy deserts of Arabia. From each and all of these training lessons, the children may learn something of the power, and wisdom, and goodness of God to all His creatures; and such lessons should uniformly be drawn from the children by every trainer during the daily lessons.

The child sees himself surrounded on every side by men of trade and handicraft, and he wishes and ought to know not merely the qualities of things and the materials in use, but how they are molded, or joined, or mixed, or decomposed, so as to render them serviceable. He sees the smith form a nail or a horseshoe; why does he heat the iron in a furnace before laying it on the anvil and striking it with the hammer? The uses of the pulley, the screw, and the lever, ought to be pictured out to him by analogy and familiar illustrations. The child sees paper; why not woven as a piece of cloth, and why more or less impervious to moisture?

The child breathes air, drinks water, sees steam, dew, hail, and snow. What are all these? the child naturally inquires; and why is the last *white*, and when melted turns into water? What are thunder and lightning, and are they of any use? The sun to him appears always round, not so the moon—why so? The principal parts of his own body, and those of other animals, with their relative functions,



ought to be known; the qualities and names of the more common minerals, and the great outlines of botany, causes of the tides, etc., etc. Such oral training lessons should be commenced in their outlines in the initiatory school, and carried forward more minutely in the juvenile and senior departments.

Much of the bewilderment felt by men of all degrees of acquirement rests in the fact, that scientific terms have not been analyzed or or pictured out by *familiar illustrations* as a first step in their early education. Complex subjects, and complex terms, which ought to have been the last, have generally been made the first stage; consequently blindfoldedness, to a considerable extent continues, these first and natural steps not having been traced. The acquirement of these primary steps, therefore, is an ordeal to which every student who practically studies in the seminary is subjected, before he can communicate what he knows to the children in the model or practicing schools.

In the industrial department, there are many important points with which the girls ought particularly to be made acquainted, and which may be carried into domestic and social life; such as, the scientific reasons why a room is better aired by opening the top of a window than the bottom—how to sweep a floor without “watering,” and without raising the dust—the effect of making tea with water just brought to the boiling point, and water which has boiled for some time—how to make or mend a fire, so as to save fuel, and whether the top or bottom of the fire ought to be stirred, in rendering it what is termed either a good or a lasting fire—the philosophy of combustion, and whether smoke ought to exist at all, or to what extent, and how it may be cured or prevented—the scientific and practical effect of toasting bread, and laying one slice above another—and the effects, practically and scientifically, of fire on woolen, cotton, linen, and silken cloths. These, in addition to those previously mentioned, and a number of other practical matters, may be rendered highly useful to females in after-life.

Children, of both sexes, should be exercised daily on some point of science or the arts, particularly in relation to ordinary life and common things. Whatever is done should be well done. Analyze one point clearly, rather than a dozen points imperfectly. Variety does not dissipate the mind, or render knowledge superficial; it is only so when the mere surface is presented, without a proper analysis and *picturing out*. The child is fatigued and disgusted when kept too long on one subject, or course of subjects, whereas each power of the mind is strengthened by frequent and varied exercise. The



natural process on entering a garden, or green-house, for example, is first to look at every thing within its four corners; but the plan generally adopted by the lecturer is to spend, as it were, a week at the door of entrance, analyzing the first few plants met with. Let the mind see the whole outlines of each department it enters upon in the first instance, and then with interest and intelligence it will patiently investigate each step in its progress.

When objects are within our reach, we make use of them in conducting the lesson as a sort of text, or starting-point; but whether within reach or not, our principle is to picture out the whole lesson, and every point of the *subject-matter* of which it is composed. Facts of which the pupils prove themselves ignorant are, of course, stated by the master—the lesson is then drawn, and given at the time by the children themselves in their own language. Their ability to do so, is the test whether the subject has been simply and properly pictured out—for if so, they must understand what they mentally see—keeping in view that we do not know a thing until we *see it* with our mental eye. For example, if separate lessons have been previously given upon the properties of heat, and water, and steam, and air, and the condensing influence of cold, and the screw, and the pulley, and the inclined plane, and the lever and the centrifugal force; and if all these and other forces be pictured out, as combined in one machine, the children will readily understand what a steam-engine is, in their minds, and tell the trainer the effect of its power upon the shaft that may move spinning machinery, raise water, or propel a steam-vessel or railway train.

These oral gallery lessons are conducted daily on precisely the same mode with Bible training lessons. Whilst the Bible lessons are uniformly read from the Bible itself, the secular oral gallery training lessons are taken from such subjects as are given in a subsequent chapter. The Bible lesson ought to be the first in the morning, and the oral secular gallery lesson the first in the afternoon, although only twenty minutes or half-an-hour be occupied in conducting it.

There are *very few* good text-books on science and secular subjects, which can be read by the children before and at the moment the daily secular lesson is given, both because they are generally too lengthy or incomplete, and because nine-tenths of the points to which our oral training lessons refer are less abstract, and of more practical advantage, than the subjects to which these treatises refer, and must of course be given by the master. Oral secular training lessons, as a distinct branch, therefore, are conducted by the trainer *without book*.

This, however, does not prevent the master elucidating any point he chooses to fix upon during the ordinary reading lessons of a school book.

By some strangers we are complained of as being too simple, by others as being too lofty, in the subject-matter of our lessons, and that the terms used while analyzing them are too simple, or, on the other hand, too complex; they would thus place us "between two fires." Our desire, however, is, that the pupils *see* every step of the progress of picturing out, whatever the subject may be. Our practical students at first uniformly complain of the difficulty of simplifying every subject; but, eventually, they become fully convinced, from experience, that *simplicity is the last and highest attainment of a trainer of youth.*

#### PRACTICAL EXAMPLE I.

##### Early Stage\*—Initiatory Department.—The Camel.

Now, children, if you see this picture (presenting the picture of a camel, if you have one, but if not, you must describe its comparative size with some animal they are acquainted with, noticing also the peculiar hunches upon its back.)

What is the name of this animal? *The Camel.* Camel is the name of...*this animal.*† The camel, children, lives in hot countries, such as Arabia. Arabia is a very hot country in Asia, where there are hot sandy deserts, in which there are neither trees nor...*grass.* The camel has feet and legs, and...(pointing to the parts) *a head, and...a back,*—as every animal has. *What a hump on its back, master!* This is what is called a...*hump.* Do you remember the name I gave to that hump? I called it a hunch. A great...*hunch;*—that, then, is a...*hunch.* Tell me how many hunches it has got. *Two.* It has got...*two hunches on its back.* This one is on... Where is this one near? Supposing this boy were to walk on all fours, that is on his hands and...*feet,*—and a hunch were above this place. What do you call this place? *Shoulders.* The camel, then, has a hunch upon...*its shoulders,*—or close behind...*its shoulders,*—and another upon... *What is this? Tail.* Is this the tail? *Back, Sir.* It is upon...*its back,*—near...*the tail,*—but not...*upon the tail.*§

Now, then, children, I shall tell you something more|| about this wonderful animal. *It has got crooked hind legs, Sir.* Very right, my little girl; the camel has got very broad strong...*hind legs,*—which look as if they were...*crooked,*—

\* In every stage of the child's progress, questions and ellipses must be judiciously and naturally mixed. Three dots thus...mark the ellipses—Italics—the answers of the children.

† No lesson is proceeded with until the children are physically and intellectually drilled into order. (See Notes, Stage I., "A Stay," and "Man with the withered hand.") At the end of every point of the lesson, also, some slight physical movements are requisite, such as stretching out arms simultaneously twice or thrice, rising up and sitting down, etc., varied according to the age and condition of the feelings of the children. Some of these are absolutely requisite before and during the progress of every lesson, but one of the most powerful means for securing the attention are the trainer's actions and variation in the tones of his voice.

‡ Inverting the sentence.

§ The younger the children are, there must be more ellipses and fewer questions.

|| Some slight physical exercises may now be necessary.

and in the next lesson we have upon the camel, we shall say something about the use of what appears a crook in its...*hind legs*,—and you will be better able to understand the reason then than you would just now.\* Let me tell you, that the camel has got on his body very fine hair of a light brown color, called... What would you call the hair that grows upon the camel? (No answer.) What would you call the hair that grows upon a cow? *Cow hair*. What would you call hair that grows upon the camel? *Camel hair*. This hair, children, is made into cloth, and makes very pretty...*jackets*. I have no doubt that cloth made from camel's...*hair*—would make a jacket, as this boy says, but it is made chiefly into cloaks or...*mantles*. The climate† is too hot for jackets, that is to say, the sun is too hot in the country where the camels...*live*—for the people to...*wear jackets*. People in hot countries generally prefer loose wide clothes, not clothes that fit tightly like...*a jacket*. Why? *Because they are cooler*. The body is kept cooler, or at least pleasanter, when the clothes are loose than when...*they are tight*. What part of the world are we speaking about? You will remember I told you at the beginning of the lesson. What was the name? *Arabia*. This girl is right; don't forget the name of the country where camels chiefly live...*Arabia*. Very well, the camel's hair is made into...*cloaks*—and *mantles*. Do you remember, in one of our Bible lessons, who was said to have worn a garment made of camel's hair? *John*. John the...*Baptist*.‡ Very well, children, you have said that the camel lives in... *Arabia*—that it has two...*hunches on its back*—one as large as you see, and the other...*small*—or...*smaller*; that its hair is of a...*light brown color*—and very...*fine*. And what do the people make of its hair? *Cloth*—cloth for...*mantles*.§

Look what a nice place that would be for a ride, children. That place is something like a... What is put as a seat on a horse's back? *A saddle*. What do you think that place is like between the two hunches? *A saddle, that would keep us from falling, Sir*. Very right, boy, the hunch behind would keep you from...*falling back*,—and this one near...*the shoulder*—would keep you from...*falling*. Where? *On its neck*. But perhaps you might fall by its sides. *The stirrups would keep me up*. O then, you are for stirrups, my boy! You would ride very safely on the camel's back, if you had...*stirrups*—between these two large...*lumps*. Lumps! *Hunches, Sir*.

Now, I must tell you something more about this wonderful animal, and then you will tell me what you think of it. The camel is a very tall animal, as high as six feet, that is, from the...*floor*—to a little above my...*head*. (The master pointing first to the floor and then to the top of his head.)|| Supposing I wished to take a ride on such a high animal, how would I get on its back? *You might take a stool*. But suppose I could not get a stool, and were in the desert of Arabia? *I would jump*. Could you jump as high as yourself, think you?

\* We give the outline first. See *passim*. At the same time acknowledging one or other of the answers and observations of the children.

† A word they can scarcely as yet understand, but being expressed, the trainer must break it down.

‡ Of course the trainer remembers that this fact occurred in a Bible lesson, otherwise the question would not be put at this time.

§ The children, of course, make many mistakes, which must be corrected by training, not telling; but to exhibit which on paper would render the perusal intolerably tedious.

|| Action suited to the words is important in training, as it is in all public speaking. The attention of the old as well as the young is arrested by it, and it even partially pictures out the subject.

Yes, Sir. Try it. *No, Sir, no.* Now, I'll tell you how it is done. The keepers of the camels *train* them when they are young to kneel...*down*—upon...*their knees*. By training, I mean they make the camels...*kneel down*; that is to say, when the keepers train the young camels to kneel, they make them...*do it*. When the camels are trained to...*kneel*—on the...*ground*, they...*do it*.\* The keeper whistles, or makes some particular...*sound*,—and the moment the camels hear the...*whistle*—they... What do they do? *They kneel*. And when they kneel, any man can...*jump on its back*,—and after a person is on its back, and the camel rises up... What might they do? *Take a ride*.

Now, then, the camel rides with a man, or any burden, on...*its back*,—just like... What animal do we use for riding in this country? *A horse*. But it is much stronger...*than a horse*. It can carry a greater weight, where? *On its back*,—than...*a horse*. How long do you think a horse could go without water to drink? *Don't know, Sir*. Do you think a horse could want water a whole day? *My father's cart horse drinks every morning and every night*. Not oftener than morning and evening? *Yes, Sir, at meal hours*. Your father's horse takes water, you say, several...*times a-day*. Well, let me tell you that the camel can travel through... What sort of places did we say it traveled through in Arabia? *Hot sands*. Dry, burning...*sands*,—burning with the...*heat of the sun*,—for a whole week together, without taking a drink. *Does it get no water, master?* I'll tell you about that just now, children. There are no wells, or rivers, or...*ponds*,—or water of any kind in these deserts, and God has so made the stomach of this... *animal*,—or rather God has given it two stomachs. You know the stomach is where...*we put our meat in*. And what else? Where do you put your drink in? *Our mouth*. And where does the water go after that? *Into the stomach*. Well, as the camel requires to carry heavy...*men and women*,—and what have men and women with them sometimes? *Things—goods*. The camel has goods and other...*things*—to carry besides men and women, which are a great burden, through the... Where? *The sandy deserts*,—sometimes for a whole week together, without coming to a place where they could get...*water*,—so God, out of his goodness, has provided them with a large... Where does an animal put the water it drinks? *Its stomach*. God has provided it with two...*stomachs*,—so large that it can take in as much water in one of its...*stomachs*—before it starts on the journey as serves it the...*whole time*. This boy's father's horse† requires water every...*day*. How often? *Several times a-day*,—and there is plenty of water in this...*town*. What would a horse do in the sandy deserts of Arabia, think you? *Die*. Die for...*want of water*. It would be so thirsty from want of water that...*it would die*. You say the horse would die there. Would the camel die? *No, Sir*. Why? *It has a great quantity of water*. Where? *In its inside*,—that is...*in its stomach*,—which serves it perhaps for seven or eight days, when it is crossing, that is, when it is walking through...*the deserts*,—and burning...*sands*.

\* *Doing* is the principle of the Training System intellectually, as well as physically and morally.

† While he acknowledges the answers of all, from time to time, and thus stimulates all—the master, as a moral trainer, must take care not to be partial, and that while he acknowledges the answers of the forward and warm-tempered children (*who are always ready and willing to make a show-off in school*), he as often notices and comments upon those offered by the more gentle and timid, whose answers are generally no less correct, but who require encouragement to express them, and the particular notice of whose answers, in turn, also acts as a check on the too great forwardness of the other parties. The practical exercise of this principle stimulates all alike, protecting and encouraging the timid, whether male or female and regulating and molding, by degrees, the spirit of the forward.

*of Arabia.* The horse, such as we were speaking about, you say, would not do for...*Arabia*,—but the camel will do to ride across the...*sandy deserts of Arabia.*  
 We have a number of things to say about this wonderful animal, which I must tell you at next lesson, but I wish to speak about another thing at present. It is about its feet. The camel has very wonderful...*feet.* They are broad, large feet, and very soft and spongy, like a piece of... Mention any thing you know to be soft. *Mutton, bread, butter, beef, my cap, flesh, my hand, twopenny leaves, Sir.\** Enough children. One boy says† that the feet of the camel are as soft as his hand. Tell me why do you think God has made the feet of the camel soft. (No answer.) How has God made the horse's feet? Attend, children. What kind of ground does the horse walk upon? *Soft ground.* Is the ground always soft? Where does it walk when carrying a burden, or when a man rides it? *On the road.* And when in towns? *On the streets.‡* What would take place were the horse's feet as soft as the camel's? *They would be hurt.* Our roads are covered over with...*hard stones*—and a soft foot like the camel's would...*be hurt.* The horse's feet are...*hard*—and the farrier—that is the man who shoes horses—the farrier makes something hard for them. What does he make? *Shoes.* What sort of shoes? *Iron shoes.* You and I wear... *leather shoes.* The horse wears...*iron ones.* In walking upon sand, how do you find it under your feet? *Soft.* Were the horse to ride with a heavy burden on its back on the sands of Arabia, what would happen? *It would sink.* Its hoofs or feet would...*sink in the sand*—and then it would not...*get on—its journey,* when walking on the...*soft sand.* And what would happen to its feet? Do you know what its hoofs are made of? *Hard.* True, they are hard, but many things are hard. This table is...*hard*.—*Bones, Sir.* Not bones, but almost as hard as...*a bone.*§ If the hoofs or feet of a horse are hard and dry like a bone, what would happen them in the hot sandy deserts? *They would be birsled.* What do you mean by birsled? *Burnt.* Not quite burnt, but...*half-burnt.* Then, you think the horse would not do for the hot...*sands—of...Arabia*—but it does very well for...*this country.* What kind of feet did you say the camel has? *Soft.* Very spongy—and...*soft*—like a lady's...*hand*—not dry like the... *horse's feet*—but soft and full of moisture, like the palm of my...*hand.*|| What has the camel to walk upon, little girl? *Sand*—and therefore God has made its feet... How? *Soft.* Soft to walk over the fine...*sand*,—and full of sap like oil,

\* Too wide a question (in fact a guess); the trainer consequently receives too many answers, and must concentrate their ideas upon one point. He seizes upon one of the answers as the nearest, and trains the children to the correct one he wishes to reach.

† The moment the master fixes upon any one answer, all are silent, to hear what is to be said upon it. This does not depend on its being right or wrong. They are satisfied that some answer is attended to.

‡ During the next lesson, or in Stage II., the reindeer may be brought in as a comparison, but the horse, an animal with which they are familiar, is enough at present. In future lessons the comparison of the reindeer in the snows of Lapland, the horse at home, and the camel in the deserts of Arabia, and the adaptation of each to its peculiar circumstances, may then be pictured out, and from which a lesson may be drawn on the wisdom of the great Creator.

§ It would not do at this early stage, when nearly every fact is new to the children to divert their attention from the direct course, by giving the analogy between the construction of the hoof of the horse, with other substances, such as horns, whalebones, etc. This should come under its own particular head, or secular gallery lesson on horns, whalebone, etc.

|| The trainer showing and pointing to the palm of his hand. The child in this way adds, incidentally, another word to its vocabulary, viz., *palm*, the idea and the word representing the object being combined.

that never dries up any more than my foot or...*hand*. Now, tell me, why are they full of sap? That they may be...*able to walk in the deserts—a...long time—* without their... What would happen to their feet if they were as dry as the horse's feet? *Dry up*. The camel's feet, then, do not...*dry up*,—although they should be walking through hot...*sand—for many...weeks*. Why are they large? What use have they for large feet? *Don't know*. If you wish to walk through deep snow, whether would you use stilts, as boys sometimes do when crossing a stream, or would you put on snow shoes, like the Laplanders? (Silent.) You will remember we were speaking about the snows of the north the other day. Whether do you think the stilts or the snow shoes would sink the farther? *The stilts*. The stilts would...*sink very deep*,—the snow boots do...*not sink*—they do not sink very...*much*—because they are... What size are they? *Large*. The snow shoes are...*large—and...broad*. How broad? I shall tell you—they are broader and longer than a man's...*boot*. Tell me why the feet of the camel are large? *That they might not sink—in the...deserts*. Horses have hard hoofs or...*feet*—which suit them to travel in...*this country—or any...country*—where their feet...*would not sink—but...not in the deserts of Arabia*. I must tell you that there are plenty of horses in Arabia, beautiful horses, for there is hard ground in Arabia as well as...*sandy ground*—but then Arabian horses won't do for the... What were we speaking of? *Sandy deserts*—where their feet would...*sink*—and where there is...*no water to drink*.

But the camel's feet do not...*sink in the sand*—being...*soft and big*. And what does it do for water? *It carries it in its stomach*. In one...*of its stomachs*. And what does it do with the other. *It digests its food*. God, then, who made all things very...*good*, has made the camel to suit the...*sandy deserts*. Very well, children.\*

Now, I fear you are getting tired. Let us have a little exercise. Heads up—shoulders...*back*—chin...*in*—heels...*close*—toes...*out*—hands on...*lap*. Now, perfect silence.†

REVISAL.—In case too much be occupied at one time, the following Revisal may commence some subsequent lesson on camel.

We shall have done immediately. Let me see if you remember what we have said. The camel is an animal... How high? *As high as you, Sir*. How many feet? *Six feet*. I am not quite six feet high, therefore it must be... *higher than you*. I forgot to tell you that the camel is about ten feet long, that is, as long as that...*desk*. Six feet...*high*, and about...*ten feet long*. It has two large...*lumps*. Remember the name I gave you...*hunches*. Where? *On its back*—which makes a...*nice saddle to ride on*. How many stomachs has it? *Two, Sir*. One of them is...*large*. For what purpose? *To keep water in it*. A curiously formed stomach, that contains as much...*water*—as serves it...*on its journey*. Where? *Across the sandy deserts of Arabia*—for unless it had a

\* Repetition of the idea in different forms of expression is absolutely necessary during the first and second stages of training.

† When the children fill up the ellipses they naturally perform the action. Were the master simply to tell them what to do, he could not so readily secure the attention of all.

‡ Rising up, and sitting down, simultaneously, not by a stamp of the foot, which is clumsy, but by following the motion of the master's hand, from the horizontal, slowly or quickly to the perpendicular, and again to the horizontal, which may be repeated. The eye being necessarily fixed on the trainer, secures the attention, and this, and every similar exercise, establishes the habit of obedience and order.



quantity of water...in its stomach, it would die—for want of water—or from...thirst. Why? On account of the heat—and dryness of...the sandy deserts. You also told me that the camel's hair was...fine—and what color? Brown—a light...brown color,—and that the people make it into...cloth—for...mantles and cloaks. And what did we say about its feet? What sort of feet has the camel? Soft and spongy; and what else? Large. Why soft? To tread the sand. And why are they broad? That they may not sink in the sand—when the camel has...a large burden on its back. The camels go in great numbers through the deserts, with men, women, and...children—on...their backs—and also a quantity of...goods; but we must speak about these things again. It is time now to get out to the play-ground for a little.

I am thinking, children, of the camel's feet. Whether is the foot of the horse or the camel the softer? The camel. The camel walks so gently on its soft feet, that were one to walk along this floor, you would scarcely hear...it was walking. It would scarcely disturb little Henry, here, who is beginning to...sleep. Henry is not...sleeping—but just a...little sleepy; he must, therefore, get out soon into the play-ground, else he will get...fast asleep.\* So you think the soft gentle walk of the immense camel, passing the gallery, would disturb a half-sleeping boy? No, Sir.

Now, children, prepare to march to the play-ground. We shall sing the song, "Now, since our lesson's o'er." March prettily—make little noise—do not scrape or beat the floor with your feet. Go on.

To many persons who are unacquainted with the Training System, this example may appear absurdly tedious. Slow, however, as the process is which we have exhibited, many points, even of the few that have been pictured out, are too abrupt. The whole, no doubt, might have been told the children by *explanation*, and embraced in half-a-dozen sentences; or by the question and answer system in a couple of pages; but mere external objects, however varied, or explanation by the master, never can secure an equal amount of understanding as does the principle of *picturing out* in words by familiar illustrations—questions and ellipses mixed, etc.

A trainer who can conduct the first stage or outlines properly, finds no difficulty whatever in conducting the subsequent stages—each succeeding exercise also, on any subject, finds the pupils more capable of bringing out the lesson, so that what would occupy a fresh trainer and fresh scholars one hour to picture out, so as to draw the lesson, will be eventually more easily done in twenty minutes.

#### PRACTICAL EXAMPLE II.

Stage I.—(Children, who may have been One or Two Years under Training.)  
The Mole.

Tell me children, where the mole lives? In the earth—under...the ground.

\* Long before the speech is ended, little Henry, of course, is quite lively. A pull, a push, a scold, or a touch with the rod, whatever effect such may have at the moment, is not so lasting as a general appeal to the understanding and feelings.

† Three dots...mark the ellipses. Italics the answers of the children.



How many feet has the mole? *Four.* And it is therefore called...a *quadruped*. Where do most quadrupeds live? *Above the ground.* Right. What sort of fore-legs has the mole?—long or short? *Short.* Now, since animals live in such different situations, what should you expect them to be? (No answer.) Do you remember the lesson we had lately on birds? *Yes, Sir.* Well, what was said about land and water birds? *The water ones had webbed feet.* And why? *That they might swim.* But besides the swimming ones, there are some that go to the water and...*wade.* And what have they? *Long legs.* And besides, they have very...*long necks*—and...*short tails.* What would a pheasant or a peacock's tail be to them if they were wading in the sea or a river? *It would trouble them.* It would be...*cumbersome.* Without such a tail they are much more...*comfortable.* When you look at a land bird and a water one, and compare them, what do you notice—do you observe any difference? *A great difference in the way in which they are made.* What was the word that was formerly given, instead of the way in which they are made? Try to remember. *Structure.* Quite right; and they are made differently, or have a different...*structure*—because they differ in their...*ways of living*—or their... Who remembers the word that means ways of living? *Habits.* Now, all sit upright and attend. When you find an animal of a particular structure,\* what will you be led to think about it? *That it has particular habits.* And if you are told that an animal lives in an uncommon place, or has particular habits, such as the mole, what will you expect it to be? *Of a particular structure.* All will now answer me. The form or structure of an animal is always well...*fitted to its way of living.* All again. The habits and structure of the animal always...*agree—suit one another very well.* We'll now hear this boy in the lowest seat repeat it... Quite correct.†

Many of you, I dare say, have seen what the mole makes in the fields? *Mole-hills.* If you take away the earth, what will you find below? *A round hole.* What size—large or small? *Like the hole in our water-pipe.* And out of this hole it has...*thrown all the earth.* In what direction does the hole go? *Downwards.* Yes, for a little, and then it goes far...*along.* I perceive most of you have seen mole-hills. Now, hands up all who have seen a mole. (Only two or three have seen the animal itself.) You who have seen a mole will tell about what size it is? *A rat.* Well, let us try to find out then, what kind of body would be best...*fitted*—for its...*place of living*—and its way...*of living.* What does it feed upon, do you think? *Worms and insects.* And what must it do to get them? *It must dig through the earth.* Just like a... Tell me any sort of people who dig along below ground—below the earth. *Miners—or...colliers.* But then the miner, when he makes his way under ground, what has he to work with? *Picks and shovels.* What does the mole use? *Its feet—its nose.* When this boy speaks of its nose, what other animal is he very likely thinking of? *A pig.* And if it uses its nose, what should it be? *Sharp and strong.* Just like...the pig's—which uses its nose for the...*same purpose*—for the purpose of...*digging.* It digs for...*roots.* But as the mole has more digging than a pig,—besides its nose, what will it also use? *Its feet—legs.* Which? *Its fore feet.* It will chiefly use its...*two fore feet*—for the purpose of...*digging*—because they are...*thick*—and...*short.* What do you observe on the toes of animals? *Nails, claws.*

\* However complex the word may be, when clearly pictured out, it may be used ever afterwards.

† Inverting or reconstructing the sentences, more especially in regard to juvenile children, is of great importance, for obvious reasons, as we have already stated.

Since the fore feet have so much more work than the hinder ones, you would expect them to be—stronger or weaker? *Stronger*. Quite correct. They are very...*strong*—and you would say, such strength is...*very necessary*. What kind of legs do you think will be most convenient under ground? *Long, short...* Whether will a tall or a short man get along a coal mine more easily? *A little man*. But the mole, if it had long legs, might make its hole...*larger*, says a girl. That is quite true, and in a large hole or gallery, a long-legged mole would go along as...*easily*—as a...*short-legged one*—would do in a...*small one*. But if the mole were to make a large hole, it would have more...*work*—and if more work, it must take a...*longer time*. Now, if moles are like children, they will be anxious to save their...*labor*. Which legs, then, will best fit the mole to save labor and time? *Short ones*. Short ones will be more...*convenient*. With short legs their work...*will be less*.

When a dog scrapes away the earth, where does it put it? *It throws it under his body*. Yes—between its body and the ground there is plenty of...*room*, because its legs are...*long*. But with legs very short, the lower part of the mole's body almost...*touches the ground*. And if it touches the ground, in what way will it be better to throw the earth? *Away by the sides*. All will repeat. The earth will be...*thrown back*—not under its...*body*—but...*by the sides*. And why? *Because of its short legs*. As it throws the earth back with its feet, what do they answer for? *A shovel*. Right; and a shovel is...*broad*. When it digs, it uses its...*feet*—like a... What do laborers use to break up hard ground? *A pick*. Therefore its feet must be...*sharp*—and... What else? *Strong*; and when the earth is loosened, it uses them for a...*shovel*—therefore the mole's feet should be...*broad*.

You told me before that the nose was...*sharp*—and round the shoulders how do you think it will be? *Thick*. How will the body be toward the hinder parts? *Smaller—Thicker*. Some say thicker, and one says smaller. Let us see. If this were the hole (drawing it on the blackboard, or forming the shape with your two hands,) and the body of the mole were large behind in this way—if it were to throw the soil back, what would happen? *It would not get past*. What would not get past? *The earth would not get past*—past the...*hinder part of the mole*. Surely; and then the mole could not...*get forward*. When it has got a quantity of soil past its body, what will it do with it? *Push it all back*. Yes, out of the...*mouth of the hole*. All will now tell me the shape the mole should be of. You have heard that its nose should be...*sharp and strong*—its feet...*broad*—its shoulders...*thick*—and its body growing rather...*smaller behind*.

What do you think the body is covered with? *Fur*. And whether should it be soft or stiff? Suppose an enemy of the mole to meet it in front, what would the mole do? *Run away*. But before it could run, what must it do? *Turn in the hole*. But you remember the hole is just about the width of its body—what must it do? *Go backwards*. Yes, it will run backwards till it comes to some...*opening*—or...*hole below*—and then it will run... How? *Forwards*. When it runs backwards, the hair would...*rub against the sides of the hole*, and the hair would be...*raised*—or...*ruffled*. And if it were stiff, it would be just like a... What do we use to take off the dust from our clothes? *A brush*. What, then, would be done if it were to be brushing all the way backwards? *The earth would tumble in*. Right; and it would get into...*a heap*—and the poor mole would be...*stopt*—and... What would happen to the mole? *It would be caught*. Now, what kind of hair would be most suitable? *Soft*. Right; and if very soft, when you draw your hand along the back from the tail to the head, how

will it be? *Nice and soft*—it will be nearly as smooth as when you...*draw it the other way*. Besides, if it were stiff, when the earth is moist, the animal would become... *How? Dirty*—the soil would stick on the...*stiff hairs*; but if it were soft, the soil or earth would...*fall off again*, and it would still be...*clean*. The hair of the mole is very soft, and is called...*fur*. God therefore has given the mole... what sort of hair? *Soft*—that can move as easily...*backwards as forwards*.

When earth or dust is falling all round us, as it will be when the mole is digging, what are we afraid of? *Our eyes*. Quite right; our eyes are very...*easily hurt*. There are some animals, like the hare, that have very large eyes, but besides being large, they are very... Do you remember what we said about the hare some weeks ago, when we had a lesson on that animal? *The eyes stand out*. Another word for standing out? *Prominent*. All will repeat the word that means standing out? *Prominent*. The hare's eyes are large and...*prominent*. And if the mole had such eyes, what would you say? *They would be hurt—they would be in the way*. What must we have besides eyes that we may see? *Light*. And where does the mole chiefly live? *Under ground*. And, under ground it is...*very dark*. When a collier goes down the pit, he takes...*a lamp*; but as the mole has no lamp, having eyes in the dark would...*be useless*. Will it have any need of eyes at all? *No, Sir*. This boy, perhaps, remembers hearing people say to others, You are as...*blind as a mole*. I must tell you that sometimes the mole comes above the ground, then eyes will be...*useful*. But as it is oftenest under ground among falling earth, you say they need not be...*large*—and especially they should not be...*standing out*—or...*prominent*. All will now repeat; the eyes should be...*small and low*—that is, sunk in... Where? *A hollow place*. And if sunk in a hollow place, what would happen? *They would not be easily hurt*.

We shall now go over the chief points once more, all answering. You think it should have its nose...*sharp*—and...*strong*—its legs...*short*—feet...*broad*—to make its way...*through the earth*. Its body thick at...*shoulders*—towards the tail rather...*smaller*—that earth may get... *How? Easily past*. Its fur would require to be...*very soft*—and its eyes prominent, or how? *Small*—and...*sunk in the socket*.

Now, look at this stuffed mole, and compare it with what you have told me. Every thing that you could think of, and a great...*deal more*—has been given by...*God*—to make the mole...*happy*—and to add to its...*comfort*. At once you see here the Creator's *wisdom*—and...*power*—and... What else? *Goodness*—to suit it for the kind of life God desired it should...*live in*.

#### PRACTICAL EXAMPLE III.

##### Stage III.—Air a Conductor of Sound.

Children, we are to have a lesson to-day upon sound.\* What do you mean by sound, children? *Noise*. What is a noise? You hear my voice just now; do you call it noise? *Speaking*. True, I am speaking, and you hear me...*speaking just now*; but would it be possible for me to speak without you hearing me? *No, Sir*. Think for a moment. Am I speaking just now? *Yes, Sir, you are speaking to yourself*. I am speaking, you think, but you...*do not hear*. Now, why is it you do not hear? When you hear me or any one speaking, you...*hear*

\* It is well to tell the children at once the subject of the lesson.

a sound; or if I strike my hand on this desk—you hear a sound. You know what I am saying when you hear the sound of my voice—and you know what I am doing by the sound of the hand.

I wish to know why it is that I can move my lips without your hearing me speak, or lay my hand on this desk without hearing a sound? Tell me what sound is. I suppose I must tell you.\* You all know what air is? Wind. Wind is certainly air—air in motion, but if not in motion it still would be... air. Air, you know (from former lessons) is a substance; and however light air may be when compared with the desk—still it is a substance. We say "light as air," air, however, has weight. Do you remember how heavy atmospheric air is? It presses on all sides with a weight equal to about 14 lbs. on the square inch.† It presses this way, and that way—and every way—equal to about 14 lbs. to the square inch. There is something substantial in any thing that may be beaten, or squeezed—or pressed. If I turn this slate on its broad side slowly, do you hear any thing? No, Sir. Now, I shall move it smartly, what do you hear? A sigh. What is a sigh? A sound. Is sigh the proper word, children? No, Sir; sound.‡

Now, children, tell me how it is that you hear me speaking? By the air. When I strike my hand on the desk, what happens? There is a sound. True, there is a sound; but how is the sound produced? We shall see how it is. When I strike my hand upon the top of this desk, it makes the desk... What does it make the desk do? Sound. Observe; I shall strike my hand upon this wall, and then upon the desk, and you will tell me which gives the greater sound—Which? The desk. Why so? It shakes more and vibrates.§ You think the stroke made on the top of the table vibrates more than the wall. Very well, then, why was there a greater sound from the table than from the wall? You told me that you heard me speaking by the air. How do you think you can hear the sound of my striking the desk? By the air. And the sound from the wall? The air. Then why should there be any difference between the loudness of the sound from the table and the wall? (You don't know, I see.)

You told me that the atmospheric air—the air that is in this room—is a substance. You saw me strike the air which you say is a substance, very smartly with the slate, and you heard a sound. Now you also told me that the table vibrated that is trembled. By vibrating, what do you mean? Trembling or quivering; that is to say, if the top of the table trembled or quivered—it was set in motion—or in motion. The top of the table was not at rest, but in motion—moving very quickly. What did the top of the table strike against, for you know if the top of the table moved it must move against something? When the top of the table vibrated like the top of a drum, what did it strike against? The air. The air being a substance, and filling every part of this room—was struck quickly. How? By the vibratory movement—of the top of

\* The trainer has developed or ascertained the amount of the children's knowledge. They knew the facts, but not the reason.

† The children are understood to have had lessons on air before, but none on sound.

‡ In many quarters of the United Kingdom, provincialisms will be given by children in the course of training; and this mode may be adopted to correct them.

§ This term, of course, had been pictured out during some former lesson on motion, and therefore is now used.

‡ Although the whole body of the table may vibrate, it is preferable to confine the attention of the children to one point, so long as your statements involve nothing erroneous or contradictory.

*the table.* And... What did the trembling or vibratory motion produce? *A sound.* The air was moved up and down quickly from its place. Where? *On the table;* and this rapid...*motion—of...the air, which is...a substance—produced...a sound.* Whether will there be a greater sound when I strike my hand smartly or softly upon the table? *Smartly.* Why? *Because it will vibrate the more.* The top of the table will rise up and...*down more—and, therefore, it will...* What will it do? *Sound the more.* You will hear a greater...*sound—because the air is disturbed or shaken more by the greater vibration, than...the little one,—than by the less...vibration.* But why does the wall, when I strike it with my hand, not make as loud a sound as when I strike it upon the table? *The wall does not shake the air so much—being...harder—or rather, not so easily...shaken.*

Tell me now, children, whether the air will sound when it is in motion or at rest? *When in motion.* Wind, you know, is...*air in motion.* You say you hear the wind when...*it blows—that is, when the air is in...quick motion;* and when it can not easily pass a house, or a...*tree—it makes a...noise, or...a sound, and you say, O what a noise the...wind is making!* but when the air is not in motion, or moving only very...*slowly, you say, There...is no wind.*

Now, children, tell me what air in motion is? *Wind.* You tell me, wind, or...*air in motion—striking against a house or a man, makes...a noise, and a noise is...a sound.* Well, if I strike my hand on the slate this way, against the air, what will it produce? *A sound.* And what does it do to the air? *Sets it in motion.* My hand, or this...*slate, or any thing I strike the air with, moves it...out of its place.* And where does the air go to that has been moved out of its place? *To another place.* And where does that air go to? *To another place,—and so on, still to...another place;* and thus—the whole air in the room will be... What will it be? *Set in motion.*

We might extend the subject of this lesson, and proceed to picture out whether sound travels in straight lines as light does; for example, as in the case of the flash from the firing of a gun to the eye, or the report of the same to the ear, and why the sight and the sound are not simultaneously seen and heard. Also, by a shadow intercepting the light. Further, that light is not seen at all through an opaque body like a wall, and yet sound is heard through it although faintly. Why so? Again, small waves visibly come in circles direct to the person who may be bathing in the sea, but do not stop here, but come round to the opposite side of his body in smaller circles, diminishing in height as they increase in diameter. This appears more plainly from a stone being thrown into a pond, each wave being succeeded by another, until they reach the side.

From all these points, when pictured out, the children will come to the conclusion, and tell you that light travels more quickly than sound, and in a different form—that light passes through the air in (pretty nearly) straight lines—that sound is not only conveyed by the air, but that it must move in circles. Thus we may trace the wisdom and goodness of God to us his intelligent creatures, in the varied effects of light and sounds upon the eye and ear.

It is the experience of almost every trainer, after conducting training lessons, that he has acquired for himself some minute points of knowledge of which he was formerly ignorant, or which had escaped his observation; and at the same time, established others of which he may have had only a very indefinite conception—practice, therefore, adds knowledge to the trainer as well as to his pupils.

SELECTION OF SUBJECTS FOR ORAL GALLERY TRAINING LESSONS ON NATURAL SCIENCE AND COMMON THINGS.

The trainer, whether conducting an Initiatory school or a Juvenile, may choose one particular lesson for each day, or he may take them progressively as they appear on the following lists. These lists are not presented because they are either complete or the best that might be selected, but simply as suggestive of such a useful course as that over which a master might successfully conduct his pupils in a shorter time than may be anticipated. The list No. I. should be considered more as initiatory and preparatory to No. II.; and therefore the subjects therein specified, when taken up for the first time with children of whatever age, are intended to be treated more generally. *The broad outlines* being pictured out first to serve as a solid foundation, and the more minute points, save such as may likely be interesting to the pupils at the time, being reserved to a period when their minds are better prepared to receive them. And in no case should a technical term be employed till the children have first had conveyed to them a clear perception of the idea therein involved.

The subjects contained in either list, more especially those in the first, are not designed to be taken up consecutively. The time for selecting a particular lesson can not be prescribed; it should rather be suggested by circumstances, particularly in an Initiatory Class—as by the season of the year, events of the time, nature of the weather, what the children may have seen or met with in their walks, any object exciting their curiosity or observation, what they may have heard that interested them, by their toys and by their games, at home or in the play-ground, etc., etc.

The lessons will thus prove greatly more natural, pleasing, and efficient, than if given in any connected course, however well arranged; as in the earlier periods of life, and even considerably beyond it, a mind free to be guided by the natural expansion of its faculties resents whatever is continuous. Here a little and there a little, is the natural principle of action. Any subject, therefore, however interesting, will prove tiresome if prolonged beyond due bounds.

*List No. I.—Initiatory or Infant Department.*

In drawing out these lists, as well as those of the Bible lessons, our greatest difficulty has been to limit the numbers, and yet present a sufficient variety of points for the school trainer to picture out as daily lessons, each occupying from



twenty minutes to half an hour. One or other of such lessons as appear in Lists I. and II. form the basis of a daily Oral Secular Training Lesson both to pupils and Normal students.

1. *Grass*—Why the earth covered with it.
2. *Corn*—Its varieties, and the comparative amount of nutriment possessed by each sort.
3. *Pas*—Mode of supporting stalks.
4. *Potato*—Its history and qualities—contrast with bread.
5. *Plowing*—Uses of.
6. *Harrowing*—Wherein different from Plowing.
7. Advantages of Punctuality and Order—picture out—give illustrations.
8. Cleanliness and neatness in person.
9. *Bread*—Different kinds—how made.
10. *Tea and Coffee*—Where grown, and their use.
11. *Sugar*—Where grown, and mode of culture.
12. *Refining of Sugar*.
13. *Molasses*—What, and how prepared.
14. *Milk*—How obtained, and its uses.
15. *Butter*—How made, and how preserved.
16. *Bee*—Outlines of its habits—Industry.
17. *Foot of Fly and Boy's Sucker*—Compare—Philosophy of these.
18. *Honey*—What is it, and how obtained.
19. *Bee's Wax*—How formed.
20. Wisdom of Bee displayed in construction of cells.
21. *Spider*—Nature and habits—food.
22. *Spider's Web*—How formed.
23. *Ant*—Its nature and habits.
24. *Ant*—Different kinds of.
25. *Caterpillar*—Its transformation.
26. *Silk-worm*—Its natural habitat—on what fed—how kept in colder climates.
27. *Silk*—Whence and how obtained.
28. *Silk*—Contrast with cotton and sheep's wool in the formation of yarn or thread—comparative strength—why.
29. *Covering of Birds*—Admirable adaptation to their mode of life.
30. *Nests of Birds*—Why of different colors, and why instinctively placed in different positions.
31. *Covering of Waterfowls*—Contrast the hen with the duck as suited to their particular mode of life.
32. *Web-footed Birds*—Enumerate—why webbed.
33. *Beaks of Birds*—Contrast the hawk with the raven and swallow.
34. *Waders*—The Heron, etc.
35. *The Camel's Foot*—and the reindeer's—wisdom in their formation—habits.
36. *The Dog and the Cat*—Compare their nature, habits and uses.
37. *Elephant's Proboscis*, and the CAMELEOPARD's long neck in relation to their habits and mode of life.
38. *Hooked Bills and Claws*—Contrast—why so formed—compare with the Sparrow or Lark.
39. *The Sloth and the Hedgehog*—Means of defence—habits.
40. *The Lion and the Bear*—Nature—habits—means of attack and defence.
41. *The Hare and the Partridge*—Means of defence—habits.
42. *The Whale*—Where found—habits, size, how defended from cold.
43. *Sheep's Wool*—Why different in texture in different countries—advantage of this to the animal, and to manufactures.
44. *The Mole*—Its habits—mole-hills—fore-feet—means of defence—nature of its hair or fur, compare it with that of the dog or sow.



45. *The Structure of the Mole.*
46. *The Beaver*—Its teeth and tail—habits, mode of constructing its habitation—use of its fur.
47. *Rats*—Are they of any use—may they and such vermin be killed—and when—(nothing made in vain.)
48. *Clothes*—Of what use—would certain sorts be equally suitable in all climates.
49. *Dwelling-Houses*—Effects of overcrowding.
50. *Imperfect Drains*—Picture out consequences upon health.
51. *Water*—Weight—composition and uses.
52. Why does water rise in pipes to the level of fountain from which it is taken—picture out the philosophy of this.
53. *Respiration*—Sensible and insensible—picture out the uses.
54. *Waterproof Clothes*—Picture out their effect on health.
55. *Becyng.*
56. *Winnowing of Corn*—Various modes of.
57. *Nostril*—Position and use.
58. *Weaving*—Picture out the principle, and compare it with sewing.
59. *Felted Cloth*—Picture out the principle, and compare it with woven cloth.
60. Compare the teeth of a Cow with those of a Beaver.
61. Various modes of catching fish.
62. *Frog*—Nature—habits—if of any use—(nothing made in vain.)
63. Compare the foot and feathers of the hen and duck in respect of their habits.
64. *Coral*—How produced—where—results.
65. *Oyster*—Its shell—habits.
66. Mode by which shell-fish attach themselves to rocks.
67. *Leech*—how it inflicts a wound—uses.
68. *Earth-worm*—Its use to the farmer.
69. *Bat*—Its habits—construction.
70. *Nettle*—Its uses—where generally found.
71. Mode by which animals defend themselves—horns—feet—speed, etc.
72. Lead and iron—compare qualities and particular uses of each.
73. Beat iron and cast-iron—how made—compare qualities and uses.
74. Compare the screw, pulley, and saw.
75. Teeth of animals—distinguish the variety and adaptation to their mode of living.
76. Flesh of the different animals used as food by man—compare beef, mutton, lamb, pork, venison, fish, and fowl.
77. Compare cold and warm-blooded animals.
78. *Herring*—habits—vast numbers, etc.
79. Compare clay, sand, lime, and other soils—uses.
80. Needle-making and pin-making—with their different forms and uses.
81. Greatness and goodness of God perceptible in the least things.
82. Comparative use of roots, barks, stem, and leaves of plants—circulation of the sap—how new wood deposited, etc.—wisdom displayed in all these.
83. The distinction between boiling, roasting, and stewing.
84. Yarn and Thread—Picture out the process of making each.
85. Warp and Weft—Is there, or should there be a distinction in strength.
86. *The Cotton Plant*—mode of preparation—why not grown in this country.

*List No. II.—Juvenile Department.*

1. *Heat*—Its nature—sources of.
2. Effects of heat on solids.
3. *Conduction of Heat*—Application to clothing—compare woollen and linen clothes—why a difference.

4. *Heating of apartments by Steam*—Do black or white pipes radiate best.
5. *Why does ice float*—Train out the advantages of this in regard to lakes, ponds, etc.
6. *Evaporation*—What is it—and how caused.
7. *Why do we water our streets in summer.*
8. *Wind*—What is it—and how produced.
9. *Philosophy of drafts and air-currents.*
10. *Land and sea-breezes*—How produced.
11. *Air*—Component parts and uses.
12. *Water*—Component parts and uses.
13. *What is meant by a vacuum*—and how produced.
14. *Picture out simplest form of barometer.*
15. *Why does the barometer sink as we ascend a hill or in the atmosphere.*
16. *Rain*—How produced—general form of the drops—why—where should rain be most abundant—and why.
17. *Formation of Clouds*—How kept buoyant in air.
18. *Reason for winter clothing.*
19. *The Quill Pen*—Its history.
20. *Use of the pores of the body.*
21. *The Eye*—Its position and construction—wisdom displayed—what effect if otherwise placed.
22. *Tears*—Their nature and use.
23. *Nails of the fingers and toes*—Compare with horns, hoofs, etc.
24. *Position and use of the thumb, and little finger*—Picture out wisdom in the various lengths of the fingers.
25. *Mortar*—How formed—why mixed with hair.
26. *The Roots of Trees*—Nature and use—comparison between that of the Italian poplar and the oak.
27. *Engrafting*—Picture out the principle of.
28. *India-rubber*—How and where obtained—uses.
29. *Gutta-percha*—How obtained—its uses.
30. *Why does an iron vessel float.*
31. *Paving of streets, and of what materials.*
32. *Glass*—Of what composed, and how manufactured.
33. *Effect of pouring hot water into a glass suddenly*—picture out the philosophy of this.
34. *Making of Shot*—Why round.
35. *Horseshoes*—Why does the animal require them.
36. *How are we enabled to fix horse's shoes without inflicting pain.*
37. *Paper*—How and from what manufactured—when first made for common use.
38. *Printing*—Picture out principle of, and when discovered.
39. *Given the river system of a country to determine its mountain system, or vice versa.*
40. *Refining of gold, silver, etc.*
41. *Gunpowder*—Whence formed.
41. *Why does gunpowder propel.*
42. *The philosophy of keeping the body clean by water and rubbing.*
43. *Why does the firing of a musket produce a report when an air-gun does not.*
44. *Air-gun*—Principle of.
45. *Exhausting Syringe.*
46. *Syphon*—Nature and uses.
47. *Intermittent Springs*—Why does not the water flow continuously.
48. *Magic-Lantern*—Principle and uses.
49. *Bramah Press*—Picture out principle of—uses.

50. Picture out the simple principle of distillation.
51. *Candles*—Of what formed and how.
52. *Soap*—Of what it is composed—and how manufactured.
53. *The Sun-Dial*—Principle of.
54. *Common Clock*—Construction of.
55. *Umbrellas*—Why so formed—when first used.
56. *Coal*—Its origin and how obtained—uses.
57. *Gas*—How formed—when first or generally used.
58. How is gas transmitted through our towns.
59. The Lightning Conductor.
60. Best mode of kindling a fire, so as either to have what is termed a briar or a slow fire—philosophical mode of placing the coals so as to have either.
61. Why is snow white.
62. Picture out the uses of snow in protecting ground from severe frosts, and in supplying moisture, (in Siberia temperature of air is often below Zero, whilst the ground covered with snow is not much below freezing point.)
63. Picture out the reason why snow melts so slowly, and the beneficial effects of this, contrasted with what would happen if the contrary were the case.
64. *Snow-line*—Why does it rise as we approach the equator.
65. *Effect of light upon Vegetation*—(A vegetable which grows in the shade is pale and sickly.)
66. The reasons for the various forms of the external ear.
67. Why does fruit ripen more quickly against a garden wall, than if standing alone.
68. *What is Smoke*—Should any smoke be permitted to ascend the chimney—can this be avoided—picture out the philosophy of the principle of preventing smoke.
69. Why does a gardener cover his flower-beds with matting in a clear calm night.
70. *Circulation of Sap in Trees*—How effected.
71. Preservation of seeds of plants.
72. *Dispersion of seed*—How effected.
73. *Leather*—What is it, and how manufactured.
74. *Twilight*—How produced.
75. Why is there longer twilight at the poles than at the equator.
76. Why should we not eat the rind of fruit.
77. *The flying of Birds*—How effected.
78. Why are drops of water, mercury, etc., globular.
79. Thunder and lightning—distinguish the causes and effects.
80. Compare vapor, rain, dew, hail, and snow—outlines of, how produced.
81. Why can you put salt into a tumbler filled with water, and yet the water does not run over.
82. Why does one's image appear as far behind a plane mirror as he is before it.
83. *Barometer*—Principle and uses.
84. *Thermometer*—Picture out principle of.
85. *Pendulum*—Effect of heat and cold upon it.
86. Show how you would give children an idea of a map.
87. *What is money*—Why have coins.
88. *Circulation of Blood*—Compare with the circulation of juices in plants and trees.
89. *The Condensing Syringe*.
90. *The Air-pump*—Construction—uses.
91. *Davy's Safety-Lamp*—The philosophy of—uses—the radiation of heat. Why do we see the flash of a gun when fired before hearing the report—the philosophy of both.

92. By what means do fishes breathe.
93. Picture out the best means of ventilating a room, so as to have in it warm air and yet fresh.
94. The philosophy of making good tea, and whether water long boiled or just come-a-boil, is preferable.
95. Causes and cure of dry rot.
96. Whether will a ship sink deeper in the salt sea or in a fresh water river—the reason.
97. Picture out why the earth and moon keep in their orbits round the sun.
98. Why the length of day varies from the equator to the poles.
99. Gold and lead—compare qualities, malleability, value, ect.—uses.
100. Rope—compare relative strength of one made from cotton, flax, and sheep's wool.
101. Candle—why does the flame ascend—philosophy of this.
102. Rainbow—picture out the cause.
103. Particles of air and water—prove what form the particles are of.
104. Prove that air has weight—changes of weight.
105. Dyeing—picture out why wool is difficult of being dyed an engrained color.
106. Hairs—why are we apt to catch cold when our hair is cut—construction or form of hairs.
107. Steam-engine—picture out the parts and principle.
108. Balloon—cause and principle of its ascension.
109. Mineral strata—if any advantage by being placed in a slanting and not perpendicular direction—design and wisdom.
110. Why may a candle be shot through a wooden door—give the philosophy of this.
111. Lever—principle and use.
112. Volume and power of water when turned into steam—illustrate this by examples—ten kettle, etc., etc.
113. Phases of the moon—causes.
114. Sun or moon—causes of an eclipse.
115. Why fish die when taken out of the water—why a dead fish turns on its back in water—why blood cold, and of a blue color.
116. Sponges—whence derived.
117. Beneficial influence of the sun upon the creation.
118. Contrast iron and gold.
119. Means of supplying water to a city—how the water made to rise, etc.
120. Flowers—stem, flower-cup, petals, stamens, pistils—why some droop—difference in structure of those and upright ones, etc.—abundance of flowers—use of same in pasturage.
121. Is vegetable life favorable to animal—picture this out philosophically.
122. Bring out the fact that the elastic force of air is proportioned to its density.
123. Train out the mode of determining latitude by the elevation of the Pole.
124. Bring out the ordinary method of determining longitude.
125. Different modes of noting time.
126. Center of gravity—which is safer, to rise or sit in a high-seated carriage, should the horses run off, and why.
127. Distinguish between wind, storm, hurricane.
128. The principle of Bramah's Press.
129. Picture out the principle of operation between a knife and a saw.
130. Electric Machine—the principle.
131. Galvanic Box—the principle.
132. The Sun—distance—velocity of its light—how ascertained.
133. Planets and Fixed Stars—distinguish—how—distances.

134. Comets—what supposed to be—velocity.
135. The Hand—principle of its motion—why fingers and thumbs of different lengths and thickness.
136. Gas—Effects on health—of permitting more to escape than can be consumed in ordinary burners—the principle of this combustion.
137. Steam Engine—effect of filling the box with steam, and condensing it alternately.
138. Distinguish the difference in fiber or staple between wool, cotton, silk, and flax—whence derived.
139. Dry-toast—effect of laying one slice above another.
140. The Human Frame—what latitudes most favorable to vigorous development.
141. Is light material, or immaterial—prove this.
142. Distillation—philosophy of—why is the spirit evaporated and then condensed.
143. The uses of Lakes—*regulators* of rivers.
144. Hoar-Frost—what is it—how formed—wherein does it differ from dew.
145. A laundress drops a little saliva on her smoothing iron to test its heat—on what principle.
146. The *Wedge*—the principle of.
147. The *Inclined Plane*—uses in every-day life.
148. Where should a bed be placed—near the floor, or at some distance from it, and why—picture out the effects upon health.
149. The *Telescope*—in its simplest form, what is it.
150. The *Microscope*—in its simplest form, what is it.
151. Why is it dangerous to drink cold water when the body is much heated.
152. Bathing—whether should a person bathe when the body is perfectly warm, or when cold—picture out the effect in both cases.
153. Why is it dangerous to bathe when the body is heated after much exertion.
154. Why is the horse fitted for bearing burdens, and the ox only for drawing.
155. Where are flies and other insects during winter.
156. How is a fly enabled to walk on the ceiling.
157. The helm of a ship—on what principle is it constructed—compare with the tail of a bird; for example, the swallow.
158. Bird's nests—Their position and color.
159. Why is a house built of stone warmer in Winter and cooler in Summer than one built of brick.
160. Windmill—what is the best position of the arms to secure the greatest amount of pressure from the wind.
161. The adaptation of food plants to climate.
162. Why is it colder with us in Winter than in Summer, though we are nearer the sun.
163. Effect of oceanic currents on temperature.
164. Instinct and Reason—illustrate and picture out.
165. Distinguish between a mineral, a plant, and an animal.
166. Why is the west of Europe warmer than the east.
167. The Snow Line—what causes it to ascend or descend.
168. Compare the foot and bill of the hen and duck in regard to their mode of life.
169. The philosophy of stirring a fire.
170. Why does gas or candle lights burn dimly sometimes in a crowded church.
171. The philosophy of airing a room from without. If by a window, whether top or bottom.
172. Why do the waves from the paddles of a steam vessel continue to roll till they reach the shore.
173. Prove how light travels—the rays of the sun for example.

174. Prove how sound travels—straight, curved, or how, by examples. The philosophy of this.
175. The philosophy of *deafening* the floors and walls of a house.
176. The philosophy of a boy's sucker.
177. The principle of a pop-gun.
178. Why does water rise to its source.
179. Compare lead and iron—qualities and uses.
180. Why do servants not clean or clear up windows properly with a dry cloth.
181. Picture out the operation of the axe and the saw, philosophically.
182. Picture out the chemical process, and effects of boiling, baking, and roasting.
183. The philosophy of preserving eggs *fresh* for weeks or months—we have here the pores in the shell—the principle of evaporation through these pores—why, when long kept and shaken, they may give a rattling noise. Effect of stopping up the pores by melted butter, lime, etc.
184. Effect of snow during winter on the surface of the ground, and on plants.
185. Much of the earth's strata—mineral ores and coal—are placed obliquely, at least not horizontally. Is this an advantage or disadvantage to man.
186. How earth and moon kept in their orbits.
187. The science of the tides.
188. Trade winds—how regulated.
189. The principle of the common bellows.
190. Why does the flame of a candle ascend—the philosophy of this.
191. Prove, by illustrations, of what form are the particles of air and water.
192. The use of the root of a tree, shrub, or vegetable—with their comparative size and shape to the plant itself.
193. Distinguish the difference of the bills, claws, and teeth of various animals, in regard to their mode of procuring food.
194. The philosophy of a glass being apt to break when hot water is suddenly poured into it.
195. The principle of the LEVER, in its simplest operation.
196. What is electricity—how produced—(scaling wax—a cat's back when rubbed in the dark, etc.)
197. Lightning—how communicated—lightning-rod.
198. The electric machine—its construction and use.
199. The best mode of sweeping a floor so as to keep down dust.
200. Glass—of what formed—why transparent—when was it first used.
201. The effect of rivers as leveling agents. Illustrate—the Rhone—Nile, etc.
202. Why do rock cuttings in railways gradually crumble—(effect of air and water.)
203. Picture out the difference between thread and yarn—how made.
204. Why is sheep's wool more elastic than cotton wool.
205. What is smoke—The philosophy.
206. Why is the sea not increased notwithstanding the quantity of water that runs into it.
207. The atmosphere—what is it.
208. What is coal—where found—in what form are the strata generally found. *Wisdom.*
209. In placing coals for a brisk or a slow fire—picture out which way you would place the strata of the coal for either.
210. Compare weaving and sewing.
211. The Ant—habits.
212. The Beaver—habits.
213. Caterpillar—transformation.
214. The principle of turning water into steam.

215. The comparative nutriment in potato, flour, and oatmeal.
216. Picture out the principle of engrafting.
217. Picture out the different effects of a screw nail and a common nail.
218. Picture out the difference, if any, in water just "come-a-boll," and water that has been boiling a quarter or half-an-hour, in making tea.
219. Compare the science of the telescope and the microscope.
220. The philosophy of the motion of the circulating swing in the play-ground, comparing it with the sitting-swing, and their effect on health (the one throws the blood toward the head, and the other toward the feet.) Gravitation, capillary attraction, and centrifugal and centripetal forces—all involved in this.

The master trainer will keep steadily in view that every point of research in an oral training lesson has its less or more intimate associations with other points in science, however common or familiar the object—the hand, eye, and tongue with the brain—the foot with the knee—and the vacuum with atmospheric pressure, as in "*The Boy's Sucker*," etc.

The foregoing points, each forming a training gallery lesson, and pictured out in their outlines and more common uses, will prepare the pupils to advance stage by stage, and step after step, to other more minute practical points.

#### *List No. III.—Senior Department.*

The following has been gone through most intelligently, twice or thrice, with a class of forty pupils (boys and girls,) in one of the training schools in Glasgow:—

**Matter**—What signified by the term—its general laws and properties, impenetrability, extension, figure, divisibility, and inertia—resolution of forces, etc., etc.

**The earth**—Its form—how proved—measurement and magnitude—proportions of land and water on its surface. Explanation of the terms, latitude, longitude, equator, ecliptic, tropic, arctic, antarctic, zones and poles, horizon and cardinal points.

**Its Motions**—Their causes and effects—the alternation of the seasons, and of day and night with evening and morning twilight.

**Inequalities of the Earth's surface**—Mountains, valleys, table-lands, and plains under the various names of *blancos*, *pampas*, *savannahs*, *prairies*, and *steppes*, with their properties and uses.

**Causes of change in the Earth's surface**—Coral insect—volcanoes, active, intermittent, and extinct—earthquakes—the theory of volcanoes and earthquakes, with their varieties and an outline of the volcanic world, with the changes being there produced—detrition of rivers and their deposits in lakes and seas—action of tides—and the degradation of mountains by the influences of frost, air, and water, etc.

**Varieties of Climate**—In different latitudes and at different altitudes—in the same latitude and at the same altitude—circumstances affecting it, such as soil, shelter, inclination of the land, insular or continental position, proximity to frozen regions of arid deserts, etc., etc.

**Rivers**—Their origin, increase, and destination—watershed of a country—why does the middle of a stream move more rapidly than the sides—the motion of a fluid how accelerated in a confined channel—whirlpools—rapids—cascades and cataracts—how tracing the direction of rivers on a map gives the inclination of the land—their classification as to length—how the extent of their course generally determines as to their being navigable—streams, temporary and perennial—the properties and uses of rivers.

**Lakes**—Salt and fresh—their various classes and elevations—their properties and uses.



*Seas and Oceans*—Their varieties of temperature and depth—advantages derived from the sea—why salt—why in constant agitation.

*Water*—Salt and fresh—why former more buoyant than the latter—why some bodies sink and others swim—specific gravity of bodies—mineral waters—why purest water insipid—springs, their sources—permanent, intermittent, and thermal springs—ancient and modern modes of conducting water—its properties and uses.

*Tides*—How produced and regulated—phases of the moon—eclipses and causes—harvest moon.

*Currents*—In the ocean—polar, equatorial, contrary, and under-currents, with examples, and how proved to exist—how temperatures of seas thus effected—how drift-wood, seeds, etc., thus carried unerringly to distant shores.

*Atmosphere*—Its height—its composition—oxygen, nitrogen, hydrogen, and carbonic gasses—means appointed by Providence to preserve the air in a state capable of sustaining animal life—whether more wholesome to have growing plants in a sitting room by day or by night—why the air of cities more impure than that of the country—the general properties of air and its important uses both to the animal and vegetable creation—breathing and burning compared—construction of the air-pump.

*Heat*—Natural and artificial—latent heat made manifest by friction, percussion, compression, and produced chemically—spontaneous combustion, conduction, diffusion, radiation, reflection, and absorption of heat—colors which absorb and radiate best—its expansive effects on various bodies—on the air, rarifying it and producing currents or winds.

*Winds*—Permanent, periodical, variable, and local, how accounted for—whirlwinds and hurricanes—various velocities, temperature, and names of winds—why a gale in winter heavier than one in summer—uses of storms—application of the winds by man.

*Effects of Heat on Water*—Producing vapor—tendency of vapor to ascend—formation of clouds—condensation of vapor by cold—descent of rain—why in globules—formation of snow—why white—of hail, of fog, of dew, and of hoar-frost—explanation of the forms they assume—the rainbow—how produced.

*Thermometer, Barometer, Diving-bell and Apparatus, Syphon, Balloon, and Water-pump*—Principles of construction.

*Distribution on the Earth's surface of Vegetables, Animals, and Man*—What is meant by an Organic and what by an Inorganic substance.

*Difference between a Mineral, a Plant, and an Animal.*

*Distinctive Characteristics of Man.*

*Divisions and identity of the Human Race.*

*Wisdom of God in connecting the different parts of Nature.*

**MINERAL KINGDOM**—Mines in Great Britain, why superior to those of any other kingdom, though not supplying the precious metals—Iron—Tin—Copper—Lead—Mercury—Zinc—Silver—Gold—Platina—Sodium—Magnetic Ore, etc., with their properties, process of manufacture, and uses to mankind.

*Rocks*—Different formations, granite, limestone, flint, freestone, slate, alabaster, mica, asbestos, petrifications of various kinds, and a few of the more common and remarkable crystals—clay and soil—fossil remains of animals and plants, etc.

*Coal*—Its formation—manner of deposit—varieties—association with iron ore—manufacture of coal gas—best position for the gas works of a city, etc.

*Salt*—As found in mines, and manufactured from sea water or salt springs—its general distribution in nature, and valuable qualities.

*Naphtha, Nitre, Tar, etc., etc.*

*Sulphur*—Its properties, and in what kind of countries to be principally found.

**VEGETABLE KINGDOM**—General physiology of plants, aquatic and terrestrial—

their divisions—organs, roots, stems, branches, and leaves, with their various functions—the sap, flower, and fruit—varieties in the manner of the growth of trees—changes of vegetation, with the varied condition of climate—air plants, parasites, moss, fungi, fern, lichens, sea-weed, etc., etc.

**Vegetable Productions**—How those of hot, cold, and temperate countries may all be found in the same latitude—their preservation, and the various natural agencies contributing to their diffusion, as the currents of the ocean, winds, and migratory birds—man a voluntary agent in effecting the same object—adaptation of food plants to climate reflecting the design of the all-bountiful Creator as to the diffusion of the human family.

**ANIMAL KINGDOM**—Animal life, its effects—divisions of the animal kingdom—the integuments of the animal body—pores and their uses—bones, cartilage, muscles, lungs, heart, and vessels of the human body—respiration—circulation of the blood—why warm in some animals, and cold in others—blue and red blood, how these colors alternate—the teeth—the eye, its construction and adaptation to the wants of various animals, as in the case of fish, birds, insects, animals of the chase, and those of nocturnal habits—organs of support and motion—animal mechanics—nervous system—human brain, its protection and position, and its size compared with that of other animals—organs of sense and voice—difference in the form of man and that of other animals—instinct of man and animals—clothing of man and other animals, that best suited for different climates—effects of climate upon animal clothing—uniform heat of the human blood in all latitudes, circumstances accounting for the same—change of food and clothing requisite for various seasons and situations—how man fitted to be an inhabitant of all climes—wherein man superior to the animal creation—reason—beauty and perfection of mind and body—preservation of health, influence of cold upon it, of exercise and rest, pure air, and the regulation of the temper and passions—man's mental and moral nature—his high responsibility.

#### *Miscellaneous Subjects.*

**Attraction of Gravity and Cohesion**—Chemical, capillary, magnetic, and electrical attraction—attraction which all masses of matter have for each other—disintegration and decomposition of bodies—their integrant and constituent parts—center of gravity—condition of standing bodies—an arch, the keystone, etc.—centrifugal and centripetal forces—pendulums, principle of motion—various kinds—adaptation to different latitudes—influence of heat and cold upon them—mechanical powers—their various combinations in different kinds of machinery—the advantages and power of steam in working the same—principle and construction of the various kinds of steam engine at different times in use, and of that at present employed—invention of the screw, and its application to the propelling of ships.

**Magnetism**—Discovery of the magnetic ore, and origin of the name—its properties—power of communicating its attractive influence without loss of strength—different modes of making a bar magnet—discovery of its polarity—its earliest employment as an indicator of the cardinal points—when, how, and by whom first applied to navigation—construction of the magnetic mask and mariner's compass—deranging influences to which the latter is subject—necessity of adjustment, generally after lengthened voyages or long detention in harbor—the earth a magnet—its power of magnetizing iron fixed in contact with it for a lengthened period, as iron pallings, etc.

**Electricity**—From what substances first obtained, whence the name—electrics and non-electrics—various means of collecting it—electrical conductors and non-conductors—insulators—Leyden jar—dischargers, etc.—electric eel—production of electricity by the escape of steam through a narrow aperture—principle and construction of the ordinary electrical machine, and of the hydro-electric machine—identity of electricity with lightning—lightning conductors, why made

to terminate in the ground and generally in a well—effect of the fluid when discharged into a vegetable or animal—thunder, how produced—aurora boreales vel australes.

*Galvanism*—Its discovery, and the origin of its name—connection between galvanism, electricity, and magnetism—construction and principle of the galvanic battery—conducting of galvanism—its effect upon the animal body, and how transmitted—its application as a medical agent—principle and arrangement of the electric telegraph.

*Sound*—How produced and conveyed—echoes—bells—speaking trumpets, etc.

*Light*—Natural and artificial—effects of light on vegetation—various sources of artificial light—its mode of traveling, wherein different from that of sound—refraction—colors—bleaching—reflection—mirrors, principles and construction of plain and convex—concentration of heat and light—prisms, burning glasses telescopes—the daguerreotype.

*Ventilation*—Of private dwellings, places of public assemblage, coal-pits, etc., etc.—evils of bad ventilation—fire-damp—dry-rot, how originated, the cure—silence, etc., etc.—Sir H. Davy's safety lamp, principle and construction.

*Smoke*—What is it—must it of necessity exist—why it ascends the chimney curling in its ascent—what becomes of it—what is meant by a draught—why do some chimneys smoke, and how best prevented—why does a paper held in front of a fire increase its intensity, why are fires and stoves placed near the floor and not near the ceiling—why kept black—how heat may be conveyed from one apartment to another with little loss, etc., etc.

*Ice*—Process of congelation—why ice lighter than water—why formed on the surface of a pond and not at the bottom—why shallow water freezes sooner than deep—why water pipes liable to burst during frost—use of frost in the economy of nature—icebergs—ice-islands—ice-flows—drift, sliding, creeping and ice avalanches—extraordinary effects of the last—snow mountains and glaciers—line of perpetual congelation.

*Boiling*—Why a boiling fluid in continual ferment—why heat applied to the bottom of the vessel—why a dense fluid, or water slightly mixed with oil, retains heat longer than plain water—why hot water melts salt, sugar, etc., sooner than cold—the best method of melting such substances as sugar in a liquid—the degree of heat at which different fluids boil at the level of the sea—why they boil at a less degree on the summit of mountains—how so great a loss of heat in cooking at such an altitude as the Hospice of St. Bernard.

*Solar System*—Sun's distance from the earth—beneficial influence upon creation—apparent path—zodiac—tropics—nodes—solstices—aphelion and perihelion—why sun's warmth more felt in northern latitudes when the earth is in aphelion—sun's eclipse, equinoxes, etc., etc.

Moon's distance from the earth—influence on the sea—tides—lunar eclipse, etc. Fixed stars—planets—comets—polar star—the galaxy, etc.

A class that has been carefully conducted through such a list of subjects as the preceding, will be prepared to enter upon a more consecutive course with advantage. We therefore present the preceding lists, by no means recommending that they should be strictly adhered to, but that the order of the subjects should somewhat vary according to circumstances. Whatever may be the order, however, in which the several lessons follow, we consider that to more advanced pupils a proper classification of the subjects afterwards will prove beneficial. The repetition of a lesson under the same head is no objection whatever, as it is impossible to exhaust all the points of any one subject with young children. The trainer will therefore, of course, according to the system, revise and

proceed upon the previously acquired knowledge which he ascertains that his pupils possess.

Technical terms employed in describing the various departments of nature and art are acquired to a large extent in the ordinary process of picturing out such lessons, and thus the student is prepared for proceeding with a more consecutive and extended course—also for apprehending more fully the phraseology of books and lectures on the different branches of science.

Each of the preceding points may be pictured out as a Training Gallery Lesson in school on Natural Science and Common Things, and may occupy from twenty minutes to half-an-hour daily.

Thirty years ago, so far as we know, we were the first to introduce Training Lessons on Natural Science suited to ordinary life and things. In the Model Schools of this Normal Seminary, it has been the practice ever since. The students have also been trained to practice it in the various schools to which they were appointed. The liberty of doing so, however, has not always been granted by Directors, who themselves had not been so instructed and trained. I trust this thoroughly intellectual, and highly useful *practical* principle will now be more heartily and systematically followed in our schools and colleges than it has hitherto been.

The simple reading of some point in Natural Science—a few only of which are to be found in school-books, and from which the teacher may put a few questions on the facts stated, is by no means sufficient to a clear and adequate perception of the subject. Questioning, it is evident, amounts merely to an examination—not training;—and is not an addition to the knowledge already possessed by the pupils. It exercises their memory of facts, but does not prepare their minds to draw the lesson or give the deduction. Besides, no extract on science in a school-book can convey one-tenth of the knowledge that may be, and actually is communicated by a practical schoolmaster during an Oral Training Lesson. Sections III. and IV. present the theory of the principle—Section V. the practical working.

Be content with analyzing, illustrating, and thus picturing out in words to the mind's eye of your pupils, *one point* at a time *thoroughly*, rather than several points *imperfectly*. Condescend to use their simple words in the first instance, and rise progressively to the use of more complex terms—each term being pictured out to the understanding before being used. Do not forget to *insert* the sentences in the progress of the lesson which you accept as correct answers, forming one or two ellipses; you may then demand and expect a simultaneous answer from every child in the gallery.

\* When we say GALLERY (Lesson) we mean this. Although the Training Lesson to one pupil is the same as to fifty or a hundred, yet the conducting of it with one is less efficient than with five—five also is decidedly less so than with fifty, arising from the *sympathy of numbers* (see Chap. XI.) and fifty can not be so conveniently seated for every purpose and variety of instruction and training as in a Gallery.

Many persons object to the Training System because they find it can not be adopted at once, by a highly-educated individual, having read a treatise on the subject, or having observed the practice in a Model School. We are not acquainted with any art that can be so adopted, without *training*. Most certainly this system of cultivating the whole child, in his threefold capacity, can not. Intellectually, even we can not. Every one must train himself *by a long*, or be trained by masters *by a much shorter* process. Who is it that can write, read, fence, ride, compose an essay, or preach, without previous preparation or practice? Who can make a shoe, or watch, or a steam engine, without training?

*The Human Body and its Health.*

In conducting training lessons on various portions of THE HUMAN BODY, and their relation to HEALTH, the lessons must not be too minute or complicated at the first, but simply outlines of their various forms and obvious uses; also the natural dependence of one upon the other—words alone may convey to children a sufficient idea of these relations, *without the presentation of any human skeleton*. The minute points of analysis may, and should be left, to subsequent and professional study.

As each child visibly has Head, Arms, Legs, Eyes, Ears, Ankles, Wrists, Hands, etc., and may also have had a lesson on the circulation of juices in plants—without the presentation of a brain, skull, heart, foot, lungs, liver, etc.—the actions of each, and their relation to each other, may be easily pictured out in words by a trained schoolmaster or mistress, assisted by the blackboard.

In order that the young mind may not be tired or disgusted by too consecutive a course of secular lessons, just do as in Bible training—vary the subjects daily. Thus, one lesson on the human body may be taken up weekly, and the remaining four lessons per week as part of the afternoon exercises, on some point of the various subjects of natural and economic science.

At each point of any lesson, not merely on the physiology of the human body, and its relations to health, but, as much as possible, at the close of every lesson on natural or philosophical science, let the wisdom and goodness of the great Creator and Preserver of all things be brought out from the pupils by the trainer, and in such language as is actually within their attainments.

1. HEAD—Bring out from your pupils—The brain as the seat of thought, with all the other obvious parts, such as—eyes, ears, nose, mouth, teeth, skull, etc., with some of their uses. This as a first stage—particular parts during subsequent lessons, and at different times, as may be. If too minute, the children will get tired, and even disgusted with the course.

2. TRUNK OF THE BODY—The most simple outlines of the uses of the spine and backbone, ribs, chest, heart, stomach, bowels, muscles or flesh, skin, nails.

3. LEGS—Picture out the most obvious formation and uses of the limbs above and below the knee—bones, muscles, sinews, skin, knee-joints, ankle-joint, foot,

with heel, toes, etc. The simple outlines of their most apparent uses individually and relatively.

4. **ARMS**—Single bone above, and double below the elbow—Why? Elbow-joint, wrist—union with hand.

5. **HAND**—Formation—Bring out, by familiar illustrations, the marvelous wisdom in the formation of the thumb, and different sizes, lengths, and position of the fingers, and the use of the hand as a whole.

6. **EYE**—The trainer will bring out, during the first lesson, from the children—where placed—in a sort of socket, surrounded by bone, and even partially protected by the nose from injury by a blow—of course more tender than even it; uses of eyebrows, eyelids, eyelashes, general form, having white sides and dark center, called the pupil or apple of the eye, by which we see. The center more easily injured, and therefore partially protected by the white side, where sand or dust is more generally received than in the middle of the eyeball, which is the organic point of sight. Having proceeded thus far with the outlines, a second lesson may be conducted on the various portions of the eye—Wisdom.

7. **INTERNAL CONSTRUCTION OF THE EYE**—Impression of objects on the retina, vision, optic nerve, etc.

8. **EARS**—Use, form, nature and use of the parts outside, and could they be better or more easily placed in the head, or elsewhere? Illustrate the wisdom of their position, shape, etc.—then internal construction.

9. **HAIR ON HEAD**—How grows, how colored—use in all climates.

10. **CIRCULATION OF THE BLOOD**—in veins and arteries—uses.

11. **THE HEART**—Its action—vitality—sensitiveness. The mere outlines during the first training lesson. Ample opportunities are afforded during other lessons on the connection of the heart and liver, etc., of bringing out more minute points, and action.

12. **LUNGS**—Picture out the action of the air on them, and then to whole life of the body—effect on the blood of the decomposition of the air—what portion of the air is repelled—what portion is retained, necessary, and conducive to life and health.

13. **THE LIVER**—The outlines of its action—blood vessels—and marvelous construction.

14. **STOMACH, BOWELS**—Deposit for food—digestion necessary for life and health—attention to what we eat and drink necessary—and that the bowels be kept in a proper state, free from extremes.

15. **NERVES**—Where placed—terminating generally in the brain—feeling of pain and pleasure through them—nerves in fingers, tongue, nose, etc., may be brought out from the children as examples (in their own terms.)

16. **NOSE**—Nerves—important use of the sense of smelling—familiarily illustrated.

17. **TONGUE**—Bringing out its connection with the palate, throat, etc., and through the quantity of nerves in this organ, its great importance, in the use of food and drink.

18. **THE HUMAN BRAIN**—Its position and protection.

19. **PERSPIRATION, SENSIBLE AND INSENSIBLE**—Through what medium—for what purposes.

20. Picture out the different effects on the human body of too little and too much exercise.

21. The philosophy of washing the skin of the whole body, and its effect on health. Give, or bring out illustrations.



22. The effect on health of sleeping in a small, ill-ventilated room. The philosophy of this, with facts.

23. Picture out whether it is preferable for health to have our bed placed near to the ceiling, or near the floor, or where.

24. Picture out—Why we are apt to catch cold after our hair is cut.

25. The effect of tight M'Intosh or water-proof clothes upon health.

26. Bring out scientifically the effect of cold feet upon health.

27. Whether is white or black woolen cloth the warmer in winter.

28. Illustrate the effect of square and rounded shoulders—also tight-lacing on health.

29. In bathing or washing the body—Picture out the effects of the cold water being applied, in the first instance, to the head or to the feet.

30. In what state should we use a cold bath—cold, warm, relaxed from fatigue, or how—(Too cold or too hot dangerous.)

31. Application of wine to medicinal purposes.

32. THE PHILOSOPHY OF AIRING A ROOM—If by a window—top, bottom, or how.

33. DIGESTION—Effect of eating slowly or quickly.

34. The philosophy of mastication—varied uses of the teeth, names, etc.

35. Picture out the causes and prevention of toothache.

36. Bring out the philosophy of whether an invalid is more apt to catch cold by sitting in front or at one side of the fire—supposing the doors and windows of the room are properly placed.

*The trainer will remember that no one organ stands alone, but has others associated with it—which, of course, will be attended to in the progress of the lesson, The hand, with the arm, elbow, wrist, etc., and all with the brain.*

If all classes of the community, in town and country, were trained from infancy to a knowledge of Natural Science in common things, as a part of their school education, what additional health and comfort would not mankind experience, especially in towns. The better arrangement of streets and squares—common sewers—chimneys for smoke—ventilation of houses—economy in fuel—"eatables and drinkables"—ventilation and heating of churches and halls for public assemblies. Should architects and overseers even be unacquainted with the natural and proper mode of arranging any particular matter, some of the workmen so trained no doubt would suggest the idea.

*Many of the lessons which appear in these Lists might perhaps be better and more easily pictured out with the children if subdivided into two or three parts.*

Very many of the minute yet essential practical parts of science, applicable to common life and things, the teacher will only gradually acquire for himself, during the process of picturing out the daily training lessons. Those who have passed through an extended University course of Natural Philosophy confess this to be their experience.



*Apparatus, Diagrams, etc.*

A trainer, possessing an accurate knowledge of Natural Science, may have an opportunity, in conducting his pupils through these several courses, of rendering the subjects doubly interesting, by means of simple apparatus of no very expensive kind, and of giving much useful instruction illustrative of every-day life. We strongly recommend, therefore, that where funds can be procured, every juvenile and senior school be provided with a few or more of such articles as are enumerated at the close of this chapter; but we consider, at the same time, that these should only be obtained and added to, as the acquirements of the particular school may suggest, lest expense be incurred in the purchase of things which the master might not be able to turn to good account. In such matters very much indeed depends on his own ingenuity in devising interesting and profitable experiments and such as he can render perfectly intelligible to his class, and use also as a basis in explaining the various phenomena of nature—much, likewise, depends upon his dexterity in the various manipulations, and in the improvement and repair of his apparatus. Whilst such appliances, however, are valuable assistants, they are by no means indispensable. On the intelligent and palpable picturing out of the particular subject in words mainly depend the success of the lesson. Devoid of this, apparatus and experiments, as well as objects, may serve for show, but answer little if any practical purpose. Students complain that they can not find books on science and the arts from which they can derive a knowledge of the points required to be pictured out in the daily training lessons, without an extent of reading which they can not accomplish, and a variety of voluminous works which are beyond their reach. They also equally complain that while Bible Commentaries in general give a good doctrinal or practical lesson, yet they do not present the natural picture, or analysis of the emblem, on which the lesson rests, so uniformly presented in the Bible itself.

Our answer is this, bring up the children to your own attainments, whatever these may be, which the system of communication enables you to do, and that will be greatly higher than any class of children that may be placed under your charge; and you and they, by this exercise, will mutually acquire a power of analyzing terms, and picturing out ideas, that will render folio volumes less and less necessary. Your own mental powers will get so sharpened up as to analyze more and more easily during the ordinary process of reading such books as are within your reach, which, coupled with the increased power of observation that practice bestows, will enable you to rise to a height of knowledge, certainly as high as can be demanded in any initiatory, juvenile, or senior elementary school.

**INSTITUTIONS FOR THE DEAF AND DUMB.**—In institutions for the deaf and dumb, the idea uniformly must accompany the term, otherwise the pupils can not advance one step. Hence the surprising *substantiality* in the knowledge acquired by these interesting unfortunates. It would be

well were every master to adopt this natural process with ordinary pupils who are not deprived of such organs of acquiring information.

The Deaf and Dumb Institution of Glasgow, with its accomplished teacher and superintendent, Mr. Anderson, at its head, we would recommend as an excellent model of intellectual, religious and moral training to students; having in view the conducting of ordinary schools, with pupils perfect in all their faculties.

*Simple Apparatus for a Senior or Juvenile School.*

We now append a brief list of apparatus which may be rendered highly useful. But it must be remembered that the instruction is *not* in the instruments themselves. Many other things too tedious to enumerate might be added, but they will not fail to suggest themselves to a school-trainer as he proceeds:—

A gutta serena tube, twenty-five or thirty feet long, fitted to show how water seeks its level, and how sound can be more readily conducted than through the air.

A glass tumbler, containing about sixteen ounces, and graduated so as to explain liquid weights and measures. It will also serve to illustrate the principle of the Diving-Bell—the pressure of the atmosphere—oxygen as a supporter of combustion, and the amount of it existing in a certain volume of common air, etc., etc.

A Florence flask and spirit lamp, to illustrate the diffusion of heat in a liquid—expansion of water by heat—formation of vapor—process of ebullition—how water rises into a vacuum—the principle of Savery's engine, etc.

A water-hammer, to explain how bodies would fall *in vacuo*.

A glass globe, with a tube attached, and a small aperture below, for illustrating the principle on which a liquid flows from a cask and water from springs, etc., etc.

A glass syphon—a water-pump model—an air syringe and a water syringe.

A few glass tubes of various diameters and lengths, and some hermetically sealed at one end, fitting them to illustrate capillary attraction—the simplest construction of the barometer and thermometer—glass-blowing—the development of electricity by simple means—and the producing of musical notes by means of an ignited jet of hydrogen gas, etc., etc.

A barometer and thermometer consisting simply of the tubes filled with mercury, and a graduated card.

A differential thermometer or pulse-glass—a prism.

A gonigraph—a Gunter's chain—a tape-line—a yard rule.

A horseshoe magnet and a couple of bar magnets.

A magnetic needle balanced on a simple stand.\*

\* Such an arrangement is much superior to a regularly fitted Mariner's Compass. It illustrates the principle and use of the Compass, and serves for many other purposes in lessons on Magnetism.

A magnetic and an index needle arranged on opposite sides of a wooden dial, to illustrate the working of the electric telegraph.

An electric machine with Leyden jars, dischargers, insulated stool and the different articles requisite to the performance of a variety of experiments with the machine.

A microscope—an air-pump.

A magic-lantern.

In addition to the preceding articles, and where many of them are not available, diagrams, of which there are now a great variety published at cheap rates, including sections of steam engines, and other machinery, would be of great service. Prints in natural history, animate, and inanimate, are, of course, always useful.

Every trainer should provide himself, at all events, with geological specimens from the particular neighborhood in which he is located—with a variety of dried plants—and with fossils and petrifications where practicable; and likewise encourage his pupils in making similar collections.

## VI NORMAL AND MODEL SCHOOLS.

### HOME AND COLONIAL INFANT AND JUVENILE SCHOOL SOCIETY.

The Home and Colonial Infant and Juvenile School Society, under whose auspices the Normal and Model Schools described below are conducted, was founded in 1836, and has since that time educated upwards of two thousand teachers for Infant and Juvenile Schools. The Committee in their first Report, made in February, 1837, state with much force the reasons that suggested the formation of the Society. "The Committee may without fear of contradiction assert, that few situations in life require so much discretion, so much energy, so much tenderness, so much self-control, and love, as that of a teacher of babes; that to guide and govern an infant-school well calls for wisdom to discern, versatility to modify, firmness to persevere, judgment to decide; and they may add that no uneducated or undisciplined mind can supply the incessant care, the watchful diligence, the unwearied patience necessary to manage young children."

One of the first duties of the Committee of the Society was to reduce infant instruction to a system, the necessity for which must have been obvious to all who have observed the trifling desultory way in which infant schools were too often conducted by untrained teachers. For this purpose it was absolutely necessary to found a model infant-school, and also to prepare a set of text-books for the use of teachers. Both these objects were carried out, and the Society having constantly kept in view the necessity of improving their system, now possess an admirable Model Infant School, a Juvenile School for children between six and ten years, in which the plan adopted with the infants is carried out in its development with those of riper years; and have published a series of text-books for the use of infant-teachers, obviously drawn up with the utmost care, and excellently fitted for the purpose in view.

The establishment is located in Grays Inn Road, and contains accommodation for a Model Infant School for children between the ages of two and six; for a Juvenile Model School for children between the age of six and sixteen, and for sixty persons sent to be trained as teachers. The following documents, published by the Society, exhibit the qualifications of candidates, and the course of instruction pursued in both the Model School, and the Training Department.

*Qualifications of Candidates who enter the Institution to be recommended by the Committee to Schools, and the Conditions under which they are admitted.*

The Committee receive into their Institution, in Gray's Inn Road, near King's Cross, for a limited period, persons either desirous to enter for the first time upon the work, or those who, having engaged in it, feel their own deficiency, and are anxious for improvement.

In order to prevent disappointment and mistakes, the Committee think it necessary to state what they consider the necessary qualifications of candidates, and the conditions under which they are received.

**Qualifications.**—1. *Religious and Moral Principles.*—As the primary object of early education is to cultivate religious principles and moral sentiments; to awaken the tender mind to a sense of its evil dispositions and habitual failings, before it is become callous by its daily intercourse with vice; and to lead it to that Saviour who so tenderly received such little ones, and blessed them; to accustom them to trace the hand of their heavenly Father in his works of providence and grace; and to be impressed with the truth that his eye is ever upon them; since such is the primary object, an object which if unattempted, early education is valueless; the Committee consider that, in addition to an unimpeachable and moral character, decided piety is indispensable, and that without it no teacher can be fitted for the work.

2. *Natural Disposition and Abilities.*—There are certain qualifications of temper looked for in the teacher of young children. The power of sympathy is felt by all, but its effect upon children is almost incalculable; on this account an animated lively manner, tempered by self-possession, and a cheerful good humor, combined with gentle firmness, are very important. To these should be added, that natural fondness for children which leads to a participation in all their little pleasures and pains, and bears patiently with their infirmities and ill humors. It is also particularly necessary that infant school teachers should possess an aptitude to teach, the ability of drawing out and directing the powers of children, a quickness of perception to see the effect of the instruction they are giving, and a readiness in availing themselves of accidental circumstances to awaken moral sentiment, or draw out some intellectual faculty.

*Acquirements.*—It would be desirable that a candidate should be able to read, to write a tolerable hand, to sing, should know the simple rules of arithmetic, be well acquainted with the Word of God, and possess some information in grammar, geography, and natural history.

It will be seen that they think the office of teacher requires certain indispensable natural qualifications and some attainments; and, having this opinion, the Committee would earnestly entreat those interested in the cause of early education to patronize only such persons as their judgment can fully approve, every facility for the improvement of those who devote themselves to the work being now afforded on reasonable terms.

*Conditions.*—1. The Committee receive candidates in the first instance on probation; and on or before the expiration of a month, their qualifications are reported on by the superintendent in communication with the master of the model school; and if the report be satisfactory, they are allowed to continue; if not, they leave the Institution.

2. All candidates who are to be recommended to schools are to remain twenty-four weeks in the house, and the Committee can not receive any who will not come in for that time. The wives of married candidates remain such time as the Committee decide in each case, if they can not remain—as it is much to be desired that they should—the whole time.

3. The charge is reduced to 7s. a week, making £8 8s. for the twenty-four weeks, which includes every expense, except washing.

4. Married men are now admitted to be trained as teachers of juvenile schools, without their wives, on the above terms, viz. 7s. a week, for twenty-four weeks, finding their own lodgings.

5. Unmarried men are not trained in the Institution.

6. Six young females, not exceeding seventeen years of age, are received as pupil teachers for one, two, or three years, according to their age, at an annual charge of £25, which includes washing and books.

7. The admission of teachers for short periods having been found very inconvenient to the arrangements of the Institution, and attended with comparatively little benefit, the Committee do not receive teachers for less than six weeks, unless they have actually the care of schools, and are, in consequence, unable to remain for that time.

8. The return of teachers to the Institution contributing greatly to their improvement, the Committee agree to allow all teachers who have been regularly trained there to re-enter for one month, at a charge of £1 only, or six weeks for £1 10s., whether the money is paid by the teachers or from school funds.

**COURSE OF INSTRUCTION for the TEACHERS in training at the HOME and COLONIAL INFANT and JUVENILE SCHOOL SOCIETY.**

**I. SCRIPTURE.**—The authenticity of the Bible and the evidences of Christianity; a general view of the different books of the Bible; a daily Scripture text with remarks, chiefly of a practical nature; instruction in the most important doctrines of the Bible to promote real religion, the lessons especially bearing upon the duties and trials of teachers.

**II. WRITING AND SPELLING.**

**III. LANGUAGE.**—Grammar; etymology; composition.

**IV. NUMBER.**—Mental arithmetic; ciphering.

**V. FORM.**—Lines and angles; superficies; solids.

**VI. NATURAL HISTORY.**—Mammals; birds; plants.

**VII. ELEMENTARY DRAWING.**—For the cultivation of taste and invention; as an imitative art.

**VIII. VOCAL MUSIC.**—Singing; the notation of music.

**IX. GEOGRAPHY.**—A general view of the world; England and its colonies; Palestine.

**X. OBJECTS.**—The parts, qualities, and uses of common objects; the essential properties of matter.

**XI.—EDUCATIONAL LESSONS.**—Principles of education as founded on the nature of children; on the government of children, and moral training; on subjects for lessons; on graduated instruction; on methods of teaching; on writing and giving lessons.

**XII. PHYSICAL EXERCISES.**

*First or Lowest Class.—Six Weeks.*

The students in this class are chiefly occupied in receiving instruction for their own improvement, with a view to their future training.

**P. M.**

*Morning.*

8 15. The business of the day is commenced with a text from Scripture, and remarks. This is followed by an educational motto, setting forth some principle or practice of education, on which a few remarks are also made.

9 30. A lesson on Scripture.

9 15. Practice in singing pieces from "Hymns and Poetry."

9 30. A lesson on objects, or the properties of matter.

10 30. Recreation.

10 45. Observing a lesson given to the children in one of the practicing schools by the superintendent of those schools.

11 30. A lesson on language.

12 30. Dismissal.

*Afternoon.*

2 0. A lesson previously given in the preparatory or practicing schools, examined as to its object, and the method of giving it.

3 0. A lesson on number.

4 0. A lesson in singing and the notation of music, or in drawing, for the cultivation of taste and invention.

5 0. Walking exercise on Monday, Wednesday, and Friday.

6 30. Dismissal on Tuesday and Thursday.

*Evening.*

8 30. Scripture instruction, or analyzing lessons in "Model Lessons."

7 30. Entering heads of lessons in note-books.

9 15. Dismissal.

*Saturday.*

8 15. A Scripture text and educational motto, as on the previous days.

8 30. Scripture instruction.

9 30. Gymnastics, under a drill-sergeant.

10 30. Scripture instruction.

11 30. Entering heads of lessons in note-books.

Note.—The afternoon of Saturday is a holiday for all the teachers in the Institution.

*Second Class.—Twelve Weeks.*

As the students now begin what may properly be called their training, more time is appropriated to the principles and practice of early education.

**P. M.**

*Morning.*

8 15. A Scripture text and educational motto as to the lowest class.

8 30. A lesson to the upper section of the class in geography, or on the principles and practice of early education, and to the lower section on Scripture.

9 15. A lesson on number or drawing as an imitative art.

10 0. In charge of classes of children in the schools, or a continuation of the lesson on drawing.

10 45. A lesson on the principles and practice of early education.

11 30. Attending and remarking on gallery lessons given by students of the class.

12 30. Dismissal.

- Afternoon.**
- 9 0. In charge of classes of children in the schools.
  - 10 30. Observing a lesson given to the children by the mistress of the infant school.
  - 3 0. Drawing up sketches of lessons, or analyzing lessons in "Model Lessons," or other exercises of the same kind.
  - 4 0. Notation of music, or practising drawing.
  - 5 0. Walking exercise on Monday, Wednesday, and Friday.
- Evening.**
- 6 30. A lesson on Scripture, or natural history.
  - 7 30. Entering notes in daily journals.
  - 9 15. Dismissal.

- Saturday.**
- 8 15. A Scripture text and educational motto, as in the other days of the week.
  - 9 30. A lesson to the upper section of the class on geography, and to the lower section on Scripture.
  - 10 30. Gymnastics.
  - 11 30. A lesson on Scripture.
  - 12 30. Entering notes in daily journals.

### Third Class.—Six Weeks.

The previous instruction and practice of the students is now brought to bear upon the government of large numbers of children, and the time is chiefly employed as assistants in the schools, or in taking the entire management of one of the small practicing schools. When they are not so employed, their time is occupied as follows, viz.:

- M. M. Morning.**
- 8 15. A Scripture text and educational motto.
  - 9 30. A lesson on the principles and practice of early education, or on geography.
  - 9 15. In the schools employed as general assistants.
  - 12 30. Dismissal.

- Afternoon.**
- 2 0. In the schools as before.
  - 5 0. Dismissal.
- Evening.**
- 6 30. A lesson on natural history or Scripture.
  - 7 30. Entering notes in daily journals.
  - 9 15. Dismissal.

- Saturday.**
- 8 15. A Scripture text and educational motto.
  - 9 30. A lesson on geography.
  - 9 30. Gymnastics.
  - 10 30. A Scripture lesson.
  - 11 30. Entering notes in daily journals.

### Time allotted to each subject of study.

The following table exhibits the time weekly allotted in the different classes to each subject of study, and also the average weekly time.

	First or Lowest Class.		Second Class.		Third Class.		Average Weekly
	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	
<b>I. General Improvement:—</b> Scripture	8	30	7	0	7	0	3 45
Writing and spelling, reports of lessons, &c.	10	30	12	30	12	30	11 30
Language	6	15	2	15	0	0	2 7
Number and form	5	0	0	2	15	0	1 49
Natural history	0	0	3	0	3	0	2 15
Geography, including the Holy Land	0	0	1	0	1	15	2 30
Objects	6	15	0	0	0	0	1 34
Vocal music	4	15	3	0	3	0	2 34
Drawing	3	0	5	0	5	0	3 15
Gymnastics and walking exercise	1	0	1	0	1	0	1 0
<b>II. Lessons on the principles and practice of early education</b>	11	15	12	30	12	45	9 45
<b>III. Practice in the Schools:—</b> Taking charge of classes, and afterwards of galleries of children	0	0	4	0	4	0	2 0
Giving an opinion on the lessons of other teachers	0	0	4	30	4	30	0 2 15
Giving lessons publicly	0	0	0	0	0	32	15 0 0
Attending as assistants in the schools	0	0	0	0	0	0	10 15
Having the sole charge of schools under inspection	0	0	0	0	0	0	0
<b>Recapitulation:—</b> General improvement	44	45	35	0	31	45	20 45 34 0
Principles and practice of education	11	15	12	30	12	45	3 0 9 45
School practice	0	0	8	30	8	30	32 15 12 15
<b>Total number of hours weekly</b>	50	0 56	0 56	0 56	0 56	0 56	0

\* Much time and attention are given to these journals, both by the students and those who instruct them, as well as by the ladies of the Committee, to whom they are sent for examination.



It is deemed unnecessary to give any syllabus of the courses of ordinary instruction, but the following syllabus of lessons on the principles and practice of early education, is annexed, as it shows what is in some degree peculiar to this institution.

*First Course.*

It is a distinctive feature at this course that the ideas are chiefly gained from examples presented to the students. The lessons are mainly explanatory of the examples.

I. Lesson on the daily routine of employment in the Institution. The instructions by the committee for students. General rules and regulations.

II. Examination and analysis of lessons from "Model Lessons," viz:—

Lessons on objects, Part I. p. 51-93.

" color, Part I. p. 149-157.

" animals, Part I. p. 160-165.

" number, Part I. p. 103-140.

Scripture Lessons, Part III. p. 1-28.

III. Drawing out sketches of lessons on various subjects, after the example of those analyzed.

*I.—On Objects.*

- |   |              |
|---|--------------|
| 1. On a shell or leaf, according to the model of a lesson on a feather. |              |
| 2. Copper or iron . . . . .   | lead.        |
| 3. Tea or sealing wax . . . . .   | loaf sugar.  |
| 4. Vinegar or ink . . . . .   | milk.        |
| 5. Recapitulation.  |              |
| 6. Parchment . . . . .  | paper.       |
| 7. Cloth . . . . .  | leather.     |
| 8. Pipeclay . . . . .   | chalk.       |
| 9. Wood or rice . . . . .   | coal.        |
| 10. Recapitulation.   |              |
| 11. A candle or hammer . . . . .  | lead.        |
| 12. A turnip or acorn . . . . .   | a rose-leaf. |
| 13. An egg . . . . .  | honeycomb.   |
| 14. A bird or bee . . . . .   | a butterfly. |
| 15. Recapitulation.   |              |

*II.—On Animals.*

- |                                |                              |
|--------------------------------|------------------------------|
| 1. Sheep . . . . . model—hare. | 2. Goat . . . . . model—cow. |
|--------------------------------|------------------------------|

*III.—On Color.*

- |  |  |
|--|--|
| 1. The color blue . . . . . model—red. | 2. Color yellow . . . . . model—green. |
|--|--|

IV. Lessons in which "Practical Remarks" form the text-book.

V. On the art of questioning children, and on the different methods of giving lessons.

The students afterwards draw out lessons in full, according to models given.

VI. On the best method of drawing out children's observation upon the objects around them, and upon the circumstances in which they are placed, and on fixing the knowledge so gained in the mind.

VII. The characteristics of young children that must be kept in view and acted upon, in order to secure their attention, to interest them in their lessons, and to gain ascendancy over them.

1. Love of activity.
2. Love of imitation.
3. Curiosity, or love of knowledge.
4. Susceptibility to kindness and sympathy.
5. Deficiency in the power of attention.
6. The love of frequent change.
7. The force of early association.
8. Disposition to repeat the means by which they have once attained their ends.

VIII. On the senses, and the use to be made of them in early education.

IX. The gallery lessons given to the children of the preparatory or practicing schools, as to the subjects, the manner of treating them, and their bearing upon the education of the children.

*First Preparatory School.*—1. Form—1st step.

2. Color—1st and 2nd step.

3. Size—1st step.

4. Actions—1st step.

5. Human body—1st step.

6. Objects—1st step.

7. Number—1st step.

8. Religious instruction—1st step.

9. Sounds—1st step.

*Second Preparatory School.*—1. Form—2nd step.

2. Color—3rd and 4th step.

3. Size—2nd step.

4. Actions—2nd step.

5. Place—1st step.

6. Objects—2nd step.

7. Animals—2nd step.

8. Number—2nd and 3rd step.

9. Moral instruction—2nd step.

10. Religious instruction—2nd step.

11. Sounds—2nd step.

X. A general view of the different subjects of instruction in the preparatory schools, with a view to lead the students to draw from them principles and plans of teaching.

#### *Second Course.*

I. Instructions on familiar or conversational lessons, and on the subjects chosen for these lessons, in the preparatory schools.

II. Analysis of lessons in "Model Lessons."

1. Form, Part II. p. 150-226.

2. The human body, Part I. p. 24-50.

3. A flower, Part II. p. 65-76.

4. Scripture lessons, Part II. p. 1-21.

5. Bible examination, Part II. p. 125-132.

III. Drawing up sketches of lessons in writing, according to a given model, first, singly, and then in a series or course.

#### *Objects.*

1. On sugar, after the model of the lesson on bread.

2. Spices and liquids " " corns.

3. Leather and silk " " cotton.

#### *Animals.*

1. On a tiger . . . . . Model—A pheasant

2. The elephant and the cat . . . . . A pig.

3. Different kinds of teeth . . . . . Different kinds of feet of animals.

4. Comparison of parts of a quadruped and bird. . . . . Hand and foot.

#### *Scripture Illustrations.*

1. The sun and the dew. . . . . Model—The rainbow.

2. Sheep—lion " . . . . . The vine.

3. Fishermen of Galilee " . . . . . The shepherds of Judaea.

#### *Scripture Narratives.*

1. On the Prodigal Son, and on } Model—Joseph's forgiveness  
2. The Brazen Serpent } of his brethren.

3. David's Veneration for his King " Solomon's respect for his mother.
4. The Nobleman's Son. " Mark x. 46 to 52.

*In Series or Course.*

1. A variety of sketches, after the model of the lesson on water.
2. A series of sketches on a given subject " on prayer, &c., as in " Model Lessons," Part III. p. 24, &c.
3. A graduated series of sketches on the " on a same subject. straw, a cat, &c.
4. On the subjects appointed for lessons weekly at the different galleries.

IV. Writing out lessons in full on specified subjects—As

1. To develop the idea of Inodorous.
2. " " Pliable.
3. " " Tasteless.
4. " " Soluble and fusible.
5. " " Semitransparent.
6. " " Elastic.
7. " " Aromatic.
8. " " Natural and artificial.
9. " " Lesson on an elephant.
10. " " Comparison of the cow and pig.
11. " " A piece of poetry.
12. " " The rainbow.
13. " " The addition or subtraction of 8.
14. " " Explanation of the terms—sum, remainder, product, quotient.
15. " " Substance of lesson X. in Reiner's " Lessons on Form."
16. " " On the illustration of the general truth, " God is angry with the wicked every day."

*Note.*—The number of sketches and lessons which the students are enabled to draw out during their training of course depends upon their ability and upon the previous education they have received. Some of these lessons are examined publicly, that their excellencies or errors may be pointed out for the improvement of the class, the name of the writer being withheld.

V.—*Gallery Lessons.*—With reference to the Gallery Lessons, instructions are given on the following points:—

1. The sketch.
2. The subject-matter.
3. The summary.
4. The application of a moral subject.
5. On maintaining order and interest.
6. The exercise of the minds of the children, and the knowledge gained.
7. The manner of the teacher.
8. Voice—pronunciation.
9. Importance of attention to the whole gallery of children.
10. On the use to be made of incidental circumstances.
11. On the questions to the children.
12. Mechanical plans.

VI.—On the subjects taught in the schools, their suitability to the children, and the mode of treating them:—

1. Color.
2. Form.
3. Size.
4. Weight.
5. Physical actions and operations.

6. Number.
7. Place, as preparatory to geography.
8. Sounds, as preparatory to singing and the notation of music.
9. Objects, including models of common utensils.
10. Teaching by pictures of common objects, and drawing objects before children.
11. The human body.
12. Animals.
13. Moral instruction.
14. Religious instruction.
15. Teaching pieces of poetry.
16. Drawing and writing.
17. Reading and spelling.
18. Language, including composition, grammar, and the explanation of words.
19. Number, form and language, as the elements of intellectual instruction.
20. Summary of the principles learnt in considering the subjects of lessons for infants.
21. Drawing out sketches of the different methods of giving lessons, and the uses to be made of them, showing which are bad and which are good, and those suitable to different subjects.

#### VII.—Miscellaneous:—

1. A course of educational mottoes.
2. On intuitive knowledge and early development.
3. On principles and plans of education.
4. Anecdotes of occurrences in the school, brought forward with a view to form right principles of moral training and intellectual development.
5. On the play-ground, especially in reference to its influence in the intellectual and moral training of children.

#### Third Course.

##### I.—The practice of the school-room, and the principles on which it should be regulated:—

The school-room and its apparatus, including library, collection of objects &c.

The opening and general arrangements of a school.

Attendance, and the best method of raising and filling a school.

Admission payment, and first treatment of children.

General order and quietness.

The physical state of the children, health, cleanliness, neatness.

The exercises of the school-room and play-ground.

The division of time, and the subjects of lessons in a school.

Modes of leading elder scholars to work, independently of the master's direct teaching.

The government of a school with respect to its spirit and plans.

The influence of numbers in teaching and moral training.

Rewards, punishments, emulation.

Assistance, including paid assistants and monitors; the monitorial system.

The defects and advantages of the individual, and simultaneous methods of instruction, and the use of the ellipses.

Examinations by the teacher, for parents and for subscribers.

Holidays.

##### II.—Points respecting teachers:—

The intellectual and moral qualifications of a teacher, and the circumstances which affect him in his labors.

The conduct of teachers to parents, committees, inspectors, and the public.

The means by which teachers may carry on their own improvement.

**III.—On the mental and moral constitution of children with reference to the principles on which education should be based:—**

*Mental.*

The various operations of the mind, intellectual and moral, and the wisdom and goodness of God which they display.

The dependence of one intellectual faculty upon another, and the necessity for the orderly and progressive development of the whole.

The intellectual diversities of children, and the method of treating each variety of character.

*Moral.*

The importance of moral training on a religious basis, showing how the Bible should be our guide.

Diversities in the moral character of children, and the method of treating each, viz.,

Attachments of children.

Anger, and the treatment of passionate children.

Quarrelsome children.

Children disposed to injure and destroy.

Cunning children.

Covetous children.

Fear, and its use and abuse, as a means of discipline with children.

Firmness, and its tendency to become obstinacy.

The love of distinction and applause.

The cultivation of benevolence.

The sense of right and wrong.

Respect.

Obedience.

**IV.—General truths respecting the operations of the minds and moral feelings, and the uses to be made of them in the education of children.**

*The Graduated Course of Instruction pursued in the Model Schools.*

**I. RELIGIOUS INSTRUCTION.—1st step: Moral Impressions.**—The children of this gallery are very young, direct religious instruction can scarcely be attempted at first, but their moral sense is to be cultivated, and moral habits formed. For instance, little acts of obedience are to be required from them—their conduct towards each other regulated, and little conversational lessons are to be given upon the kindness of their parents and teachers, with a view to develop the feeling of love, and to instruct them in their duties.

**2nd step: First Ideas of God.**—The object, as the children advance, is to produce the first impressions of their Heavenly Father—to lead them to feel somewhat of his power from its manifestation in those works of his with which they are familiar; and somewhat of his benevolence, by comparing it with the love shown them by their parents and friends.

**3rd step: A Scripture Print.**—The story to be gathered from the picture, by directing the attention of the children to it, and by questioning them. A portion of the Scripture should be given, that the children may connect the narrative with the Bible, and receive it as Divine instruction. The children should also be encouraged to make their remarks, by which the teacher may ascertain how far their ideas are correct. The object of the lesson should be to make a religious and moral impression.

**4th step: Scripture Narratives.**—The incidents or characters should be chose with a view to inculcate some important truth or influential precept. Elliptical teaching should be introduced to help the children to receive the story as a whole, and to sum up the lesson. In giving these lessons, the story itself should be either read from the Bible, or partly read and partly narrated, and pictures only used occasionally, to illustrate and throw interest into the subject. Teachers ought well to consider the different positions that pictures should occupy in the different stages of instruction.

**5th step: Scripture Illustrations of Doctrines and Precepts.**—Narratives, chosen with a view to inculcate some of the most simple and fundamental doc-

doctrines of Christianity. For instance, sin, its nature, introduction into the world, its consequences, and the remedy provided for it in the sacrifice of the Saviour. As the children advance, some lessons to be given to illustrate the natural history of the Bible.

**NOTE.**—In the first or early lessons on Scripture narratives, the truth or precept should be drawn from the story by the children. In the later lessons, the precept or religious truth or duty may be stated as the subject of the lesson, and the children required to discover what Scripture narratives illustrate the truth or precept they are considering.

**6th step.**—A course from the Bible, or a course on the Natural History of the Bible. On Monday, Scripture geography.

**II. OBJECTS.**—**1st step.**—Distinguishing or naming three or four common objects, and telling their uses; or distinguishing and naming the parts of common objects, and stating their uses.

**2nd step.**—*One Object* chosen that exhibits in a remarkable degree some particular quality, that the idea of that quality may be developed. *Another*, having distinct parts, which the children are to discover, and of which they are told the names.

**3rd step.**—*One Object.*—The children to find out the qualities that can be discovered by the senses alone; also to distinguish and name the parts.

**4th step.**—*Miscellaneous Objects, Metals, Earths, Liquids, &c.* *One Object.*—The children to extend their observations to qualities beyond those which are immediately discoverable by the senses. *A little simple information* to be given at this stage on the natural history or manufacture of the object, after the children's observation has been called out.

**5th step.**—*Several objects.*—The children to compare them, and point out their points of resemblance and difference.

**III. TOYS.**—Model toys of kitchen utensils, common carpenters' tools, &c., naming them, and telling or showing their uses.

**IV. PICTURES.**—**1st step.**—Groups of objects or single figures,—naming and talking about them.

**2nd step.**—Part of the lesson to be on the recollection of a picture used in a former lesson—part on a picture of common objects.

**V. HUMAN BODY.**—**1st step.**—Distinguishing the principal parts of the human body, the teacher naming them; or the children exercising any part of the body as directed. This lesson should be accompanied with considerable action, to animate the children.

**2nd step.**—Distinguishing the secondary parts of the body. This lesson to be extended to the parts of the principal parts of the human body, the teacher continuing to name them: a good deal of action still to be used.

**3rd step.**—Distinguishing the parts of the principal parts of the human body—the children naming them, and telling their uses.

**VI. FORM.**—**1st step.**—Distinguishing the patterns of shapes for the purpose of developing the idea of form—the children to distinguish them—no names being used.

**2nd step.**—The children continuing to select the patterns of shapes, according to the one shown; when perfect in this, they may select all those that have the same number and kind of edges, and the same number of corners.

**3rd step.**—The children to determine the number of sides and corners in planes whether the sides are straight or curved; also to learn the names of the planes.

**4th step.**—A solid is shown, and the children select all those that resemble it in some points; the names of the solids are not to be given. The letters of the alphabet to be examined, and the number and direction of their lines to be determined.

**5th step.**—To determine the length of different measures, learn their names, and practice the introductory lessons on Form in "Model Lessons," part II.

**6th step.**—The course of lessons on Form in "Model Lessons," part II.

**VII. ANIMALS.**—**1st step.**—*A Domestic Animal.*—A picture or a stuffed specimen may be shown. The children to be encouraged in talking about it, to say

what they observe or know, without reference to any arrangement, the aim of the instruction being to elicit observation, to cultivate the power of expression, and especially to encourage humane and benevolent feelings towards the inferior creation. At this stage it is well sometimes to allow the children themselves to propose the animal that they are to talk about.

*2nd step: A Domestic Animal.*—Children to name its parts, color, size, and appearance. An attempt should be made in this stage, at a little arrangement of the subject, but it should not be too rigidly required. One principal object should be to encourage humane and benevolent feelings towards the lower animals.

*3rd step: A Domestic Animal.*—Children to describe the uses of domestic animals, their different actions, and with what limb they perform any action; the sounds they make, our duties with respect to them, &c. These alternate weekly with

*4th step: Animals and Human Body.*—The children to describe, where the different parts of the human body are situated, and to compare those parts with the parts of animals, pointing out in what they are alike, in what they differ, and how fitted to the habits and wants of man, or of the different animals. See course in "Model Lessons," part I.

*5th step: Wild Animals.*—Children to tell their parts, color, size, and appearance; to point out how particularly distinguished, and to learn something of their habits and residence; being led to perceive how the animal is fitted by the Almighty for its habits and locality.

VIII. PLANTS.—*1st step.*—Naming the parts of plants, and telling their uses to man as food, &c.

*2nd step.*—See course in "Model Lessons," part II.

IX. NUMBER.—*1st step: First Idea of Number.*—The idea of the numbers from 1 to 5 or 6, to be developed by the use of the ball frame and miscellaneous objects, as exemplified in Reiner's introductory lesson, "Lessons on Number," reprinted, by permission of the author, for the use of the teachers of the institution, in "Papers on Arithmetic;" to which may be added many additional exercises, such as those in the 1st and 2nd sections of "Arithmetic for young Children," &c.

*2nd step: First Idea of Number.*—The idea of the numbers from 6 to 10 to be developed by the use of the ball frame, as before; also the first and second exercises in "Model Lessons," part i., to be used as directed in that work.

*3rd step: Addition and Subtraction.*—The remaining exercise under section I, also the whole of the exercises on subtraction in the same work.

*4th step.*—The more difficult exercises in "Model Lessons," part i., &c., accomplished by selected exercises from "Arithmetic for Children."

*5th step: The Four Simple Rules.*—Exercises on the four simple rules, in number from 10 to 100, from "Papers on Arithmetic," and "Lessons on Number;" also simple explanations of the rules, leading the children to think of the operation they have been performing; also, by numerous exercises, to lead them to perceive some of the general properties of number.

X. COLOR.—*1st step.*—Selecting colors according to a pattern shown, and arranging colors, no names being used.

*2nd step.*—Learning the names of the different colors, and selecting them when called for by name.

*3rd step.*—Distinguishing and naming colors and shades of colors, and producing examples from surrounding objects; with exercises on beads of different colors.

*4th step.*—Distinguishing and naming shades of color, and producing examples from memory.

*5th step.*—The lessons in this step to be given on a specific color; the children are also to learn from seeing them mixed, how the secondary colors are produced from the primary.

XI. DRAWING.—From the age of the juveniles, and also from drawing not coming under the head of "Gallery Lessons," the following course of exercises cannot be so well arranged into stages for the various schools. It is also thought desirable that one of the courses of lessons should be presented in a continuous



form, that the extent and variety of exercise which they are intended to give to the mind may be observed. The courses form two series of exercises, commenced in the infant-school, and completed in the juvenile-school.

*First Series—To Exercise the Eye alone.*

*Measuring relatively.*—Let the children determine the relative length of lines drawn in the same direction on the slate, i. e., which is longest, which is shortest, &c. Whenever there is a difference of opinion, prove who is correct, by measuring.

Determine the relative length of lines drawn in different directions on the slate.

To Determine the relative distances between dots made on the slate.

To Determine the relative difference of the distances between different parallel lines.

Determine the relative size of angles.

Determine the relative degree of inclination of lines from the perpendicular—first, by comparing them with a perpendicular line, drawn on another part of the slate—and afterwards without this assistance.

The same exercise with horizontal lines.

Determine the relative size of circles, and then of portions of circles.

Children called out to divide straight lines, drawn in different directions, into 2, 3, 4, &c., equal or given parts, the others to state their opinions as to the correctness with which the operation has been done.

The above exercise repeated with curved lines in different directions.

*NOTE*—Several of the above exercises may be applied to the lengths, &c., of the objects and pictures in the room.

*Measuring by current Standards.*—The teacher to give the children the idea of an inch, nail, quarter of a yard, foot, half a yard, and yard, which, at first, should be drawn in a conspicuous place, for the whole class to see.

To decide the length of lines.—First practice the children upon the inch, then upon the nail, and so on up to the yard; continually referring to the standard measures.

*NOTE*—These exercises should be continued until the eye can decide with tolerable accuracy.

Determining the length of lines combined in various rectilinear geometrical figures.

Determining the circumference or girth of various objects.

Determining distances of greater extent, such as the floor and walls of the room, the play-ground, &c., &c.

*Measuring by any given Standard.*—Measuring sizes, heights, lengths, &c., by any given standard.

How often a given standard will occupy any given space, with respect to superficies.

*Second Series—To Exercise both the Eye and Hand.*

Before commencing these exercises, it would be advisable to give the children instruction (in a class around the large slate) with regard to the manner of holding the pencil, the position of the hand in drawing lines in various directions. This will be found to diminish the labor of attending to each individual separately. Instruction as to the position of the body may be left till the children are placed at the desks.

*NOTE*—The standard measures, used previously, should be painted on the walls, or placed conspicuously before the class in some manner, both horizontally and perpendicularly, in order to accustom the children to them.

The children to practice drawing straight lines in different directions, gradually increasing them in length. First perpendicular, second horizontal, third right oblique, fourth left oblique.

To draw lines of given lengths and directions.

To divide the lines they draw into given parts.

To draw curved lines in different directions, gradually increasing in size.

To try how many angles they can make with 2, 3, 4, &c., lines.

To try what they can make of 2, 3, 4, &c., curved lines. Then proceeding to copies; first copying those formed of straight lines, then those of curved lines.

To draw from copies.

Note.—In the course of forming figures out of straight and curved lines, the children should be taught to make the letters of the alphabet.

XII. GEOGRAPHY.—1st step.—The course consists of the following series of lessons: 1. The cardinal points. 2. The semi-cardinal points. 3. The necessity of having fixed points. 4. The relative position of objects. 5. The boundaries of the school-room. 6. The boundaries of the play-ground. 7. The relative distances of the parts and objects of the school-room. 8. The relative distances of the parts and furniture of the school-room marked on a map, drawn on the large slate or black board with chalk, before the children. 9. The scale of a map. 10. The relative positions and distances of different places on a map of the neighborhood. 11. The map of England. 12. The map of the Holy Land.

## SPECIMEN OF EXAMINATION PAPERS

## SCHOOL MANAGEMENT AND THE ART OF TEACHING.

At the risk of repeating some of the leading principles set forth in the foregoing "*Course of Instruction*," we give below a *Syllabus of Lessons on Education* given in the same institution to students in training for teachers in the schools of the Home and Colonial Infant and Juvenile School Society.

## EXTRACTS FROM SYLLABUS OF LESSONS ON EDUCATION, GIVEN TO STUDENTS IN TRAINING AT THE HOME AND COLONIAL SCHOOL SOCIETY.

## LESSON I.—THE PRINCIPLES OF EDUCATION AS SET FORTH BY PESTALOZZI.

1. *On the Aim proposed by Pestalozzi in Education.*—This the first point to be considered—Mistakes with respect to—The true aim of education as it respects knowledge—intellectual and moral character—Social relations—Moral and religious duties—Principles on which based—The proper work of the Teacher reduced—Results.

2. *The Influence of a good Education.*—The little that has been done by education as hitherto pursued—Causes of this—Influence of a good education on thought, feeling, sentiment, opinion, &c.—Different senses in which the child may be said to be father of the man—Influence of education established from examples—Necessity of faith in this principle on the part of the Teacher—Incidental and systematic education, difference between—The Teacher to form a good intellectual and moral atmosphere round the child—Means of effecting this.

3. *Education, Organic.*—Organs and organized bodies considered to illustrate this—Difference between growth from within carried on by organic action or development, and increase from without effected by accretion—Application—Difference between ordinary elementary education and elementary education on the system of Pestalozzi—Deductions as to liberty, activity, and power—The application, especially as to liberty, in the school-room and play-ground.

4. *On Education being an entire Work.*—Pestalozzi's motto, "Education has to work on the head, the hand, and the heart"—Dugald Stewart on the same point—Pestalozzi introduced the principle into popular education—The perfection to be aimed at in education, moral—Mistakes that have been made as to Pestalozzi's practice—Pestalozzi's estimate of the relative importance of the different elements of a child's nature, and method of dealing with each.

5. *Education should aim at the Gradual and Progressive Development of the Faculties.*—Examples of graduated and progressive instruction as—Proceeding from realities to signs, first natural, then artificial—From particular facts to general truths—From what is simple to what is complex—From the exercise of observation to the exercise of conception—From the conception of material things to abstract ideas, &c.—The first step—to find something analogous in the experience of the child to the subject presented, thus proceeding from the known to the unknown—The child to be firm on one step before proceeding to the next—The extent to which graduation should be carried—Extremes to be avoided—The graduations not to be too minute to prevent healthy exercise.

6. *Education should be Harmonious.*—The cultivation of all the faculties, not singly and apart, but simultaneously.

7. *The Character or Spirit of Education.*—"Not to teach religion alone but all things religiously"—Illustration drawn from the circulation of the blood in the body—Emplification of this spirit in the instruction, general management, and discipline of the school—Results to be expected.

8. *Early Education chiefly by Intuition.*—What is meant by intuition—Examples—Value of what is learned from experience—Early education to lead to and prepare the mind for books—When commenced with books the mind often loaded with words conveying no definite meaning to children—The powers of the mind in consequence often cramped—Intuitive teaching one of the leading features of Pestalozzi's system—Connection between intuitive and logical knowledge—The assistance the former gives to

the latter—Difference between the instruction of infants and juveniles, the one mainly intuitive, the other principally logical.

9. *Difference between Education and Instruction.*—An idea put forth strongly by Pestalozzi—Origin and application of the words—Points of difference—Instruction communicated (though the subject may be clearly explained) does not produce the same good effect, as instruction employed as a means of mental discipline—The proper bearing of this distinction on the lessons of the Teacher.

10. *Education of a Mixed Character.*—What this means—Principle on which based—Examples—Education should be practical as well as preceptive—Illustrated by the Teacher as well as enforced upon the child—Applied individually as well as collectively—Direct instruction to be followed by study—Public education united with private and domestic—Children to be carried rapidly over some subjects to develop power and energy,—slowly over others to give habits of minute investigation—Subjects of instruction enumerated.

11. *Systems of Education.*—Application of the word system—Views generally taken of systems of education—Characteristics of the chief popular systems, especially those of Stow and Pestalozzi—The one teaching chiefly through words "picturing out," as it is called, the other by things and words in their appropriate place—The specious boast of selecting what is good from every system—The motto, "That is the best system which brings the powers of the mind under the best discipline," a test—The system of Pestalozzi founded on principles and adapted to the human mind, consequently a philosophical system, might be called the natural system—Different value of principles and plans—Illustration of this shown in the different kinds of value appertaining to wheat and bread—Advantage of principles in every thing—Many Teachers appreciate plans only—Principles the only true and safe guide.

#### 12. *Summary of the leading Principles of Pestalozzi.*

1. Education ought to be essentially religious and moral.
2. Education ought to be essentially organic and complete, and not mechanical, superficial, and partial, it should penetrate and regulate the entire being.
3. Education ought to be free and natural instead of being cramped, confined, surly.—The child should have sufficient liberty to manifest decidedly his individual character.
4. Education ought to be harmonious in all its parts—It should be so carried on that all the natural faculties, and all the acquired knowledge agree and harmonize.
5. Education should be based on intuition, on a clear and distinct perception of the subject to be learned.
6. Education should be gradual and progressive, united in all parts, like a chain, forming a continued series without gaps.
7. Education should be of a mixed character, uniting the private and the public; it should cultivate at the same time the social and domestic spirit.
8. Education should be synthetical—every thing taught should be first reduced into its elements by the Teacher.
9. Education should be practical, drawing its means of development from the actual circumstances of life.

## II.—THE ART OF TEACHING.

### 1.—INTRODUCTORY COURSE.

1. *Instructions as to the Mode of giving Familiar or Conversational Lessons*, and on the subjects chosen for such lessons in the Practising Schools of the Institution.

2. *The Examination and Analysis of Lessons* selected from "Model Lessons," a work published by the Society.

3. *Drawing out Sketches of Lessons on various Subjects*, taking those before analyzed as examples.

4. *Different Methods of giving Lessons Compared*, with a view to point out which are bad and which good, also the methods suitable to different subjects.

5. *On the Art of Questioning.*—The importance of understanding this art—One of the plans of teaching much used by Pestalozzi—Different objects in view in questioning—Questions which only exercise memory—Advantages of questioning—Rules to be observed and mistakes avoided—Examples of different kinds of questions—Of a train of questions—Practice in the art of questioning.

### 2.—ON GALLERY INSTRUCTION.

1. *Introduction.*—The nature and importance of gallery instruction—Children brought under the direct influence of the Teacher—Facility thus afforded for securing order, attention, progress, moral training—Value in economising labor—The principle of success to be found in the power of the sympathy of numbers—Extent to which Teachers should avail themselves of this sympathy—Its abuses—Duties connected with gallery instruction.

2. *Preparation of Lessons.*—Directions for making a good sketch—Advantages of a

full sketch—Importance of determining beforehand the chief points of the lesson, and the method of working them out.

3. *The Subject matter.*—Importance of attention to quantity and quality—Rules by which to be guided, and the principles upon which based—Advantage of clear and natural arrangement—The ideas to be thoroughly worked into the minds of the children—sufficient but not too much new matter to be presented properly, it being almost “as important how children learn as what they learn.”

4. *The Summary.*—Definition of a summary—The qualities of a good summary—Its uses—Various ways of making a summary—Advantage of its being well committed to memory or written out by the children.

5. *Application of Moral and Religious Lessons.*—The nature of this application explained—The importance of applying moral and religious instruction—Of requiring the children to make the application themselves—What is meant by impression—Causes of failure in making religious instruction impressive.

6. *Order, Interest, and Attention.*—The importance of order—Causes of disorder—Various means of obtaining and regaining order—Difference between order and stiffness or restraint—Importance of exciting interest—Means of doing it—Difference between healthful activity of mind and excitement—Attention how to be obtained and kept up.

7. *The Exercise to be given to the Minds of Children.*—Importance of producing activity of the mind—Amount of mental exercise to be given—Means of giving it—Teachers tell too much—Ways of doing so, and causes.

8. *The Manner of the Teacher.*—Importance of manner, especially with young children—Different kinds of manner—How each affects children—The power of a decided manner—its abuse—The effects of the voice in exciting different feelings—Tones of voice suited to different subjects.

9. *Attention to the whole Gallery.*—Temptations to attend to a few children only—Effects—Means of keeping up general attention—Difficulties where a gallery is unhelpfully composed of children of different degrees of attainment—How in part to be obviated.

10. *The Use to be made of Incidental Circumstances, especially in Moral Training.*—Enumeration of those which most commonly occur in a gallery, and also in the playground—The influence that the notice of incidental circumstances has on the children, as well in an intellectual as in a moral point of view—Cautions against the abuse of this practice.

11. *On the Language given to Children.*—Relation of language to ideas—Right time of supplying language—Necessity for clearness and simplicity—Fine words and technical terms to be avoided.

### 3.—ON CLASS INSTRUCTION.

Use of class lessons—Mechanical arrangements—Apparatus—Amount of class instruction to be given—Subjects.

#### 4.—ON THE SUBJECTS OF INSTRUCTION, ETC., PROPER FOR AN INFANT SCHOOL.

1. *On the Principles that should Regulate.*—The choice of subjects should be suitable to the children's age—Elementary character of the subjects—Necessity of having a general design in each course of lessons, as well as a particular design in each lesson—The importance of the instruction being of a graduated character—Of its commencing at the right starting point—Subjects should be varied—The reason and principles upon which this is founded.

2. *The subject stated.*—Color—Object in view in lessons on color, and their suitability to this object and to infant minds—The graduated course of these lessons, with reference to the work published by the Society, entitled, “*Graduated course of Instruction for Infant Schools and Nurseries*”—Methods to be adopted in giving lessons—Principles to be deduced.

3. The other subjects treated in a similar manner—Form—Size—Weight—Place—Number—Physical actions and employments—Sounds, including practice in singing—Common objects—Pictures of common objects—Drawing before children—Human body—Animals—Plants—Language—Reading, Spelling, Writing—Pieces of poetry—Moral instruction—Religious instruction.

#### 5.—ON THE SUBJECTS OF INSTRUCTION, ETC., PROPER FOR A JUVENILE SCHOOL.

1. *Points in which a Juvenile School differs from an Infant School.*—As to its organization—Division of time—Classification of children—Home-work—Employment of Pupil-Teachers—Subjects of instruction calling the reasoning powers more into exercise—Method of giving such subjects a more continuous and systematic character—Mode of treating the children—Morally, throwing them more upon their own responsibility—Intellectually, making them more independent of their Teachers, and more accustomed to gain information and knowledge from books, teaching them early “to learn how to learn,” i. e., to be self-educators.

## III.—THE SCHOOL-ROOM, AS TO ITS ARRANGEMENT AND MANAGEMENT.

1. *The School-room.*—Influence of the appearance of the school-room on the children's character—Its effect on visitors—Desks and their arrangement—Cleaning—Ventilation—Temperature—Order and decoration—Apparatus—What it is—Its right appreciation—Care to be taken of it.

2. *The Opening of a New School, &c.*—Preliminary steps to be taken—Difficulties—Spirit in which to commence—Plans to be adopted—Admission of children—Register and other books—Payments.

3. *The Organization of a School.*—What it means—Importance of good organization—Plans to be adopted—Treatment of new scholars—Points requiring attention, as time-tables, programmes, distribution of work, &c.

4. *Division or Classification of the Children.*—Importance of classification of the children of an Infant School—Too much neglected hitherto—The advantage seen in the Model Schools of the Institution—Arrangement in galleries and classes—Principle upon which this is made, of proficiency, not age or size—The difficulties of Infant Schools, when Teachers have no assistance.

5. *Regular and punctual Attendance, and the means of insuring it.*—Importance of the subject—Different causes of irregular attendance—Method of dealing with each—Means for securing attendances, supplying a good education, having well defined and positive rules—Quarterly pre-payment—Punctual attendance—How much depending on the Teacher's own habits—Closing the door at a fixed hour—Visiting the parents, &c.

6. *The Dinner hour and arrangements for it.*—The Teacher's presence necessary—Its inconvenience considered—The social and moral effects of superintending children at dinner.

7. *The Physical State of the Children.*—Teacher's duties with respect to health, cleanliness, and neatness—Duties of parents not to be too much interfered with—Means of cultivating cleanliness, neatness, &c.—The effects.

8. *The Play-ground.*—Physical education—Its importance—Provision to be made for its connection with a school—Advantages of the play-ground in reference to moral instruction and moral training—Its bearing on the health and comfort of the Teacher—Their objections answered—Tact required in the superintendence of the play-ground—Apparatus, games, &c.—Time to be allotted to exercise—Objections of parents met.

9. *Monitors, Pupil-Teachers, and Paid-Assistants.*—Monitors, these "necessary evils," as they have been called, fast disappearing—Still often found useful—Relative value of Monitors and Pupil-Teachers, and principle on which to be ascertained—The departments of labor for which each best fitted—Pestalozzi's method of preparing Monitors, and the work allotted them—Instruction of Pupil-Teachers, general and special—Their management—Special cases examined—Pupil-Teachers almost essential to a good school, and amply repay labors of first year or two—to be early trained to "self-education"—When so trained a great relief to the Teacher—Always to be had where practicable.

10. *Examinations,* for the satisfaction of the public—The parents—The Teacher—The design and special advantages of each—Manner of conducting them—Abuses—Addresses to parents a most desirable adjunct—Suitable topics for such addresses.

11. *Holidays,* their use and number—Never to be given at fairs, wakes, &c.—Not generally desired by children in a well-conducted school.

12. *Dealing with Parents.*—Position of the parent—Its relation to the Teacher—Conclusions—The double duty of a Teacher to the parent and the school—Course to be taken—Necessity of a conciliatory manner in dealing with parents who will not submit to rules—On punishing children at the request of parents.

13. *Visitors,* special and casual—Connection of the former with the school—Attention and courtesy due to them—How far the usual arrangement of a school may be changed for visitors—Their suggestions—Spirit in which to be taken—Use to be made of them.

14. *Inspectors.*—The peculiar character of their office—Inspection always to be obtained when practicable—Its value to a good Teacher—Their view of a school contrasted with that of the Teacher—Their relation as well to the Teacher as to the Patron—The Teacher's best friend—Inspection anticipated—Preparation to be made—Lessons to be given before Inspector, as at other times.

15. *Patrons and Committees.*—Relation to the school—Claims—The blessing of a good Patron—Difficulties with Patrons or Committees—The self-will and pride of a Teacher not to be mistaken for conscience, or the love of doing good—Principles and ends to be kept in view rather than plans—Not to thwart or oppose even when not convinced—to give way in minor matters if vital points are untouched—Circumstances which appear to justify giving up a school.

## IV.—THE GOVERNMENT OF A SCHOOL.

1. *The Nature and Object of this Government.*—All plans of government, if good, must be adapted to the uniform tendencies of human nature—Qualifications required in order to govern well—Importance of government in a school, as often giving to the



child first ideas of subordination—Essential also to the comfort of the Teacher—To the progress and happiness of the children—Disorder the master defect of many schools—Dialike to Teachers often caused by misgovernment.

2. *A knowledge of the Principles of Action in Childhood required in order to Govern well.*—The principles enumerated—Their importance—Scripture references on the influence of habits—Wisdom and beneficence of the Creator seen in the early formation and power of habits—Difficulty of ascertaining motives—Importance of knowing them—The use to be made of them in governing a school.

3. *Parental Government.*—Different kind of rule as to their spirit—The political—The military—The family—Characteristics of each—Reasonableness of requiring the parental spirit in Teachers—In what it consists—Effects of possessing the spirit—The parental spirit manifested by God—Seen in Christ—The parental spirit should govern our schools—Our debt to Pestalozzi for advocating it so powerfully—His fundamental principle in all moral development and training.

4. *Authority.*—Meaning of the term—Abuses of authority—Modern mistakes—Importance of authority in the school-room—How to be used—Adaptation to the nature of the child—Mistakes as to governing by love alone—Rules to be adopted in establishing and maintaining authority.

5. *Kindness.*—Distinguished from other affections—Love essential to a Teacher—Shock often received by children when transferred from a mother to an unkind Teacher—Influence of Kindness—Principles on which based—Manner of carrying them out—Caution against extremes.

6. *Justice.*—Definition—Temptations to partiality—Children's appreciation of justice—Written rules often useful.

7. *Fear.*—Its abuses as a principle of government shown in the conduct of parents, teachers, and nurses—The use of fear in the moral economy of the child, and consequently its use by the Teacher—Cautions.

8. *Influence.*—What it is to govern with the will of a child—Means of obtaining influence—its true value both in the Infant and Juvenile School.

9. *Appeal to Principle.*—Nature of principle, or sense of right and wrong—Relative position among motives of action—Advantages—The result, self-government, &c.—Perfection of a school as to government, when good conduct proceeds from principle.

10. *Prevention.*—Importance of this principle as applied to the government of a school—Children to have full occupation—To associate pleasure with learning—Teacher to call in aid the public opinion of the school—To obtain the co-operation of parents.

11. *Rewards.*—What they are—How they act—Injurious as being an artificial excitement—As giving wrong views both of justice and merit—As rousing a mercenary spirit—As exciting vanity and pride—Means to be used to make promised rewards unnecessary—Example of Hofwyl—From our Infant Schools—The highest motives to be cultivated—Animal motives to be properly directed—Different ways of rewarding merit—Value of a reward consists not in the actual value of what is bestowed, but in the association created—Reward occasional and not expected—When it is not an incentive to exertion, but a proof that merit is recognized, it gives the idea of justice.

12. *Punishments.*—Nature, design, and spirit—Difference between punishment, correction, and discipline—The true end of punishment—Mistakes of the passionate Teacher—Effects of these on the child—Punishment should arise out of the fault—God's dealings with us our example—Natural punishments enumerated—Children to be shown the connection between sin and punishment—An unvarying punishment impossible—Should differ according to character and disposition, and the nature of faults, &c.—Evils of severe punishments—Importance of discrimination—Public exposure as a punishment—Spirit that leads a teacher to expose her pupils for her own gratification—Effects of exposure on different dispositions, and on spectators—Corporal punishment—Former and present practice contrasted—Opinion of Dr. Arnold and Dr. Bryce—Pestalozzi's rules for using it—Its absence in a good school—Expulsion when to be resorted to—Circumstances to attend it.

13. *Emulation.*—Nature of the principle—Usual application—Meaning of the word—Natural emulation, distinguished from Scripture emulation—"Generous rivalry," and "rivalry a means of self-knowledge," false ideas—Natural emulation not to be stimulated—Difficulties of a Teacher not using emulation—Substitutes for it, as—Desire to overcome difficulties—To gain knowledge—To please a much-loved Teacher, &c.



## VII. SPECIMEN OF LESSONS

IN THE MODEL AND TRAINING SCHOOLS OF THE HOME AND COLONIAL SCHOOL SOCIETY.

### SPECIMEN OF LESSONS GIVEN IN THE MODEL SCHOOLS OF THE HOME AND COLONIAL INFANT AND JUVENILE SCHOOL SOCIETY.

It is the practice for the different teachers in the Institution to draw up sketches of the lessons they have to give, and these sketches are here inserted to illustrate the manner in which the course of instruction is graduated, and that the system may be seen at work as a whole. The first lesson begins with pupils of three and four years old; the last is to the students under training. The lessons are given, in these examples, by the regular teachers of the Institution, and not by those who are learning the art of teaching.

#### LESSON GIVEN TO THE LOWEST DIVISION OF THE INFANT SCHOOL.—NUMBER.

The Superintendent explained to the company that the object of the lesson to be given was to develop the idea of Four.

##### *Sketch.*

1st.—I shall exercise the children in the number 3, to ascertain whether they have a correct idea of it; for example, I will call a child to bring me 3 pointers from among many, then 3 bottles, &c. To give the idea of 4, I will add 1 pointer to the 3 pointers, 1 bottle to the 3 bottles, &c., and make the children observe and repeat after me, as I point, 4 pointers, 4 bottles, &c.

2d.—To ascertain whether they connect the right idea with the name, I will ask them to bring me 4 pointers, 4 bottles, &c.

3d.—To see if they can apply the names themselves, I will hold up 4 bottles, 4 pointers, &c., and get them to tell me how many there are.

Lastly, I will make them go over together, in succession, the numbers they have learnt, that they may obtain an intuitive perception of enumeration, 1 bottle, 2 bottles, &c.; after this make them say, 1, 2, 3, 4, several times.

*Teacher.*—I should like a little child to bring me 3 bottles. Let Charles bring them.

The child named brought 2.

*T.*—Is he right?

*Several.*—No.

*T.*—Who can do it?

*Several.*—I can.

A little boy rose at the bidding of the teacher, and brought another bottle to her, making up the number 3.

*T.*—Now who can bring me 3 shells? (pointing to some placed at a little distance.)

*Several*.—I can.

*T.*—Let Emma bring them.

The little girl referred to brought the proper number.

*T.*—Now who can bring me 3 pointers? (referring to some small pieces of wood used in the instruction of the children.)

*A little Girl.*—I can.

The child rose and brought the number of pointers required.

*T.*—Has she brought them right?

*All.*—Yes.

*T.*—Now some child bring me 3 stones.

A little girl brought 3 stones from the same place.

The teacher finding that the children had a correct idea of 3, placed before them the same articles in groups of 4, and called upon them to repeat after her, "four pointers."

*All.*—Four pointers. (The words were repeated three or four times.)

*T.*—Now say, "four stones."

*All.*—Four stones.

The same repetition took place in the case of the bottles and shells.

The teacher's next point was to ascertain whether the children connected the right idea with the name 4, when she used it.

*T.*—Who can bring me 4 pointers?

*A little Girl.*—I can.

The child rose and brought them to the teacher.

*T.*—How many pointers are there?

*All.*—Four.

*T.*—Then did Lizzy bring them right?

*Three or four voices.*—Yes.

*T.*—Now I should like to have 4 bottles.

A little boy rose and brought to the teacher 3.

*T.*—Is he right?

*Several voices.*—No.

*T.*—Who can make the number 4?

*A little Boy.*—I can.

He then rose and brought another.

*T.*—Now how many bottles are there?

*Several voices.*—Four.

*T.*—Who can bring me 4 shells?

*A little Boy.*—I can.

He brought them to the teacher.

*T.*—Is he right?

*Many voices.*—Yes.

The same thing was repeated in the case of 4 stones, 1 stone, 2 stones, 3 stones, 4 stones, 1 bottle, 2 bottles, 3 bottles, 4 bottles, &c.

The teacher's third point was to see if the children could themselves correctly apply the name; to do this, she called upon them to pick up 4 shells, 4 stones, &c., which they did correctly. They then practiced numeration up to the point they had reached, to obtain an intuitive perception of the increase of numbers;

they said after the teacher, 1 stone, 2 stones, 3 stones, 4 stones; 1 bottle, 2 bottles, 3 bottles, 4 bottles; 1, 2, 3, 4.

*T.*—Now, Thomas, (addressing one of the children,) can you bring me 4 children? 4 who are sitting up nicely.

The little boy spoken to, rose, selected 3, and led them to the teacher.

*T.*—Well, Thomas, have you brought 4?

*Thos.*—Yes.

*T. (to all.)*—Thomas says he has brought 4 children; are there 4 here?

*Nearly all.*—No.

*T.*—Let us count; 1 child, 2 children, 3 children. Let me have 4, Thomas.

He fetched another boy, who walked before the rest to take his place by their side.

*T. (to all.)*—Should he go before the other children?

*Two or three voices.*—No.

*T.*—To be sure not, he should come round behind them.

The child was then led round, and placed by the side of the three children.

*T.*—Now say, "1 child," (it was repeated,) "2 children," "3 children," children."

Now let three children go to their seats. Now one.

The children then went to their seats.

*T.*—Who can show me four fingers?

A little boy held up all the fingers, and the thumb of both hands.

*T. (to all.)*—Are there only four there?

*Several voices.*—No.

*T.*—See what a number of fingers! How many did I ask for?

*Several voices.*—Four.

The teacher then counted four on her own fingers.

*T.*—Now, Emily, show me four.

The little girl addressed, held up that number of fingers.

*T.*—How many does she hold up?

*All.*—Four.

The lesson then closed, and the children marched out of the room singing, a more advanced class occupying their places.

#### A LESSON GIVEN TO CHILDREN A LITTLE OLDER, THE SECOND DIVISION OF THE INFANT SCHOOL, AGES FOUR, TO FIVE AND SIX.

The Superintendent stated that two short lessons would be given to the children. The aim of the first lesson would be, to make the children observe the different parts of a watch; the second would be on three objects, to lead them to observe the quality of crumbling. He begged that the age and state of development of the children might be kept in mind.

##### *Sketch.—A Watch.*

1st.—I will get the children to point to the parts of a watch, or to something that it has, as case, glass, face, hands, &c.; and will tell them the right names if they do not know them.

2d.—I will lead them to observe and tell the position of the different parts, and their number.

Having sung the song, "Work away," the children commenced the lesson.

*Teacher.*—(Holding up a watch.) What is this?

*Several voices.*—A watch.

*T.*—Now look well, and tell me some part.

*C.*—The hands.

*T.*—Yes. Tell me another part.\*

*All.*—The glass.

*T.*—Repeat, "The watch has hands and a glass."

*T.*—Find another part. (The rim or edge is pointed to.) What do you call this?

*C.*—The rim.

*T.*—Another part. (A pause.) Is there any part of the watch which you can not see when I hold it up?

*C.*—Yes, the inside.

*T.*—Now I think you can tell me some other part.

*C.*—The outside.

*T.*—Repeat, "The watch has an outside and an inside."

The children repeated the words.

*T.*—You have told me the watch had hands. Where do the hands meet?

*C.*—In the middle.

*T.*—In the middle of what?

*C.*—The face.

*T.*—Well, now you have told me two other parts.

*C.*—The watch has a middle and a face.

*T.*—Now tell me how many hands the watch has.

*C.*—Two.

*T.*—Are they both alike?

*C.*—No.

*T.*—How are they unlike?

*C.*—One is long, the other short.

*T.*—Say, "The watch has two hands, one long and one short."

The children did so.

*T.*—Can you not find out something more about the face?

*C.*—Numbers. (Other children,) Figures.

*T.*—Repeat together, "The face has numbers."

Children do so.

*T.*—Tell me some other part which you have named.

*C.*—The glass.

*T.*—How many glasses has the watch?

*C.*—One.

*T.*—And what does the glass cover?

*C.*—The face.

*T.*—Say, "The watch has a glass, which covers the face." Well, now you have been looking at the watch, and have told me what you can see. Who can tell when a watch is near, even if they did not see it?

*C.*—I can. It ticks.

*T.*—What is the use of a watch?

*C.*—It tells the clock.

*Another.*—It tells what time it is.

*T.*—Yes, and there is something else which tells the time; what is it?

*C.*—A clock.

*T.*—Now let us sing about the clock.

\*The parts were written with chalk on a slate, and gone over once or twice during the progress of the lesson.

The children then sang with their teachers, a song commencing—

"The neat little clock, in the corner it stands."

#### THE SECOND PART OF THE LESSON.

##### *Sketch.—To Develop the Idea of Crumbling.*

1st.—I will bring before the children a lump of salt, of dry earth, and stale bread, and lead them to observe their crumbling or friability, by rubbing them in my hands, also by a comparison with a stone.

2d.—Tell them this quality is called crumbling, and get them to apply the term to each substance.

3d.—Call upon them to tell me when we ought to say things are crumbling.

*Teacher.*—I have several things to show you; let me see if you can tell me what they are. (Holds up a lump of salt.) What is this?

*Children.*—Salt.

*T.*—Look now at it, (rubs the salt in her hands.) What do you see? How is the salt now?

*C.*—It is in little pieces.

*T.*—What have I done to it?

*C.*—You rubbed it, teacher.

*T.*—And what happened to the salt?

*C.*—It came into pieces.

*T.*—Repeat together, "Salt when rubbed comes into little pieces."

*T.*—(Holds up a piece of dry mould.) Now what have I in my hand?

*C.*—Dirt—earth.

*T.*—How does it look?

*C.*—Very dry.

*T.*—Now look, and tell me what I do to it, (rubs it in her hand.)

Many hands were held out, to show they were ready to answer.

*T.*—Will John tell me?

*C.*—It comes into little pieces when rubbed, like the salt.

Children repeat this.

*T.*—(Holds up a piece of stale bread.) What is this?

*C.*—Bread.

*T.*—Observe what I do, and tell me.

*C.*—You have rubbed it.

*T.*—And what then?

*C.*—It comes into small pieces.

*T.*—Can you tell me what sort of bread it is?

*C.*—Stale bread.

*T.*—(Takes up a stone.) What is this?

*C.*—A stone.

*T.*—(Rubs it.) What am I doing to the stone?

*C.*—Rubbing it.

*T.*—What happens?

*C.*—It is hard, not like the salt and stale bread.

*T.*—Now tell me the difference; who can?

A little girl is selected to answer.

The salt, earth, and bread, came into little pieces when you rubbed them, but the stone did not.

*T.*—Did you ever see bread rubbed into little pieces before?

*Several children.*—Oh, yes. Mother rubs the bread into the milk for baby.

*T.*—What do you call it, when you do so to the bread?

*A child.*—Crumbling it.

*T.*—You may say the bread is crumbling. Tell me some other things that are crumbling.

*C.*—Salt—dry earth.

*T.*—What are they?

*C.*—Crumbling.

*T.*—When may you call things crumbling?

*C.*—When they come into little pieces.

*T.*—Now tell me some things that are not crumbling.

*C.*—Stone, wood, iron, leather.

*T.*—Now repeat together, "Things that come into little pieces when rubbed, are called *crumbling*."

The lesson here ended, as the time was expired, and the visitors proceeded to the infant school-room.

A LESSON ON SCRIPTURE NATURAL HISTORY. HIGHEST DIVISION, OR ADVANCED CHILDREN OF THE INFANT SCHOOL.

*Sketch.*

*Silver.*—To illustrate the refiner's work.—Malachi, iii. 3.

The Superintendent explained, that this was a lesson on silver ore, and a piece of silver, the object being to throw light on the Scripture by means of a natural object. The step was much more advanced than those already witnessed, the children being older, and their minds more developed.

1st.—I will show the children a piece of silver, and also some silver ore; question them as to the difference; one bright, reflective, and valuable; the other impure, mixed with inferior substances, which render it much less valuable, and destroy its best qualities. Having drawn from the children all they know as to how silver may be obtained from its ore, I will bring before them the work of the refiner. He places the ore in a furnace which removes the earth united with the silver, still there may remain much dross, or scum, to dull its brilliancy; the refiner patiently sits watching the purifying process, he never leaves his work till the bright metal reflects perfectly, like a mirror, his image. Then he knows his work is done. I will then write the result on the slate: "Silver when taken from the earth is very impure, but the dross is separated by fire, and when quite pure it reflects perfectly the refiner's image."

2d.—I will read Mal. iii. 3; question the children as to whom the refiner represents; whom the silver. I will help the children to trace out our resemblance to silver ore; so much of sin mixes up with all we do; so defiled by evil, that we do not reflect the Saviour's image, we are not like him. Then I will endeavor to lead them to see how the Saviour is like a refiner; he sends trials and chastisements, which act like a furnace in removing the evil that defiles us, till we become more and more like himself.

The result written on the slate, "Christ purifies his people from sin, by sending them trials till they become like him."

3d.—Apply the subject. What makes the children like the ore? When does their teacher act like a refiner? Whom does she wish them to be like? How should they receive her admonitions?

The children having sung—

A piece of silver ore, and one of bright silver, were exhibited by the teacher.

*Teacher.*—(Holding up the bright silver.) What is this?

*All.*—Silver.

*T.*—What is this? (exhibiting the ore.)

No answer.

*T.*—Suppose you were walking along the street, and saw this lying on the ground, what would you call it? What does it look like?

*C.*—It looks like a piece of stone.

*T.*—(Exhibiting the bright metal.) What do you know this to be?

*All.*—Silver.

*T.*—Would you think this silver? (presenting the ore.)

*C.*—It looks like a piece of coal.

*T.*—You would not think this silver, (pointing to the ore,) but when you look at that (pointing to the polished silver,) you know at once that it is silver; what difference do you observe in them?

*C.*—One is white, and the other is blue.

*T.*—What besides?

*C.*—One is bright, the other is dull.

*T.*—Now tell me something in which you can see yourselves, or your image.

*C.*—A looking-glass.

*T.*—Why can we see ourselves in a looking-glass?

*C.*—Because it is reflective.

*T.*—What can you say of a looking-glass?

*C.*—It is reflective.

*T.*—Which of these is like the looking-glass in this respect?

*C.*—The bright silver.

*T.*—Is this (holding up the ore) reflective?

*C.*—No.

*T.*—What can you say of these two?

The children repeated together, "the one is reflective, and the other is not."

*T.*—Which would you rather have?

*C.*—The bright silver.

*T.*—Which is worth the most money?

*C.*—The bright silver.

*T.*—And because the bright silver is worth the most money, what is it said to be?

*C.*—Most valuable.

*T.*—Can you find out any reason why the silver in this piece (pointing to the ore) is not so bright as in this (pointing to the silver)?

*C.*—Because it is like stone.

*T.*—What makes the silver look like stone? can you find out?

*C.*—It is mixed with stone.

*T.*—Silver is taken from the earth in this state (pointing to the ore,) mixed with stones and other things; what would you call it when thus mixed.

*C.*—A mixture.

*T.*—What is a mixture?

*C.*—Several things mixed up.

*T.*—When water is mixed with mud, what do you say it is?

*C.*—"Dirty," "unclean," "filthy," "unpleasant."

*T.*—There is another word?

*C.*—Black.

*T.*—What do you say it is when it is nice and clean?

*C.*—"Clear," "fresh."

*T.*—What else?

*C.*—Pure.



T.—Yes, when it is not mixed it is pure. When a thing is not mixed, what is it?

C.—Pure.

T.—Now, which of these two pieces of silver is pure? (A pause.) What would you say this is? (showing the ore.)

C.—Unpure.

T.—Can a child correct her?

C.—Impure.

T.—Now say, "That is impure silver."

The children all repeat the words.

T.—Now say, (pointing to the bright silver,) "That is pure silver."

T.—When is silver impure?

C.—When it is taken out of the ground.

T.—Say, "When silver is first taken out of the ground, it is impure."

The words were repeated by the class and the teacher wrote them upon the slate.

T.—Now what must have been done to make this (referring to the bright silver) look as it does? What must be done to it after it is taken out of the earth?

C.—It must be polished.

T.—Do you think if I were to rub the ore, I should, by so doing, ever make it pure?

C.—No.

T.—Is polishing, then, the way to make it pure? What is it mixed with?

C.—Stones and earth.

T.—Yes; and it is often mixed with lead. If I rubbed the lead, should I make it silver?

C.—No.

T.—How could I get the silver pure? (No answer.) What must I do to make muddy water pure?

C.—Take the mud away.

T.—Yes. What do you think I must do to the silver ore to get it pure?

C.—Take away all the earth and stones with which it is mixed.

T.—I do not think you know how this is done; so I will tell you. The man who purifies this silver ore, or refines it, puts it into a vessel, and then he puts the vessel into a kind of furnace. Do you know what a furnace is? (A pause.) It is a kind of oven; and when it is there, what do you think the heat does to it?

C.—Melts it.

T.—Yes, the heat melts it; and then what becomes of all the earthy substances which are mixed with the silver? (A pause.) They rise to the top, and the silver remains at the bottom. And what do you think the man who is refining the silver does then to get rid of the impurities? I think some of you have seen your mothers do something of the same kind.

C.—Skim it.

T.—Yes, the man skims off what is at the top. Now, what is it that separates the impure substances from the silver.

C.—The heat of the fire.

T.—Say, "The fire separates the silver from the impure substances."

The children repeated this.

T.—What is the man called?

C.—The refiner.

T.—How does the refiner know when the silver is refined? (A pause.) You can not tell me. How does he know when all the impurity is removed?

*C.*—When there is a great smoke.

*T.*—Not quite so. Would you like to know?

*All.*—Yes, teacher.

*T.*—Well, the silver, remember, is in the furnace, and the fire is separating all the impurities from it. The refiner sits down and looks at it, and when the impurities rise to the top, he takes them off; and then he sits down and looks again; he does not get weary, but sits there and watches the impurities as they rise up; and he takes them off as fast as they rise. At last, all the impurities are taken away, and the silver looks so bright that he can see his face in it—he can see his own image. What can he see?

*All.*—His image,

*T.*—Say, "The silver, when purified perfectly, reflects the refiner's image."

The children repeated this.

*T.*—Like what?

*C.*—Like a looking-glass.

*T.*—Yes. If you look in a looking-glass, what do you see there? You see your image. Well, the silver does just the same as the looking-glass. The refiner sits and watches it all the time it is in the furnace.

*A little Boy.*—Teacher, how does he touch it when he wants to do any thing with it, and it is so hot?

*T.*—Think—what does your mother use?

*C.*—Uses a spoon.

*T.*—Yes; he uses a spoon. He sits there and skims it, until he can see his image in it. What does he know, then?

*C.*—That the silver is pure.

*A little Boy.*—Would he get the silver out of that stone? (pointing to the ore.)

*T.*—Oh, yes, Jackson; and that is the way in which men get it. It is at first all mixed with impurities; but they break it up into small pieces, and put it into the furnace; and then how is it made pure?

*All.*—By fire.

The teacher then wrote on the slate, "When silver is taken out of the earth it is impure. It is separated from its impurities by"—what?

*C.*—By fire.

*T.*—And when it perfectly reflects the image of the refiner, then it is in—what state?

*C.*—Then it is pure.

The teacher having written all these points on the slate, the children repeated them.

*T.*—What will the silver do when it is pure?

*C.*—Reflect the image of the refiner.

*T.*—What does the refiner do if he can not see his image in it?

*C.*—He puts it on the fire again.

*T.*—Yes; he will not take it away until he sees his image, and when he sees his image perfectly reflected, what does he do with the silver?

*C.*—He takes it out.

*T.*—Yes; he would not keep it in a minute after—he takes it out immediately.

*T.*—Tell me the two things about which the refiner is careful.

*C.*—He is careful not to take the silver out of the furnace till it is pure; and he is careful not to keep it there when it is pure

*T.*—And how does he know?

*C.*—When it is pure it reflects his image.

*T.*—Now, dear children, I have given you this lesson on refining silver, to lead you to understand what Jesus Christ does for us. Listen to this passage of

Scripture. Speaking of the Lord Jesus Christ, it says, "He shall sit as a refiner and purifier of silver, and he shall purify his people, and purge them as gold and silver, that they may offer to the Lord an offering in righteousness." (These words were read by the teacher twice.) Who is spoken of here?

*C.*—Christ.

*T.*—Who shall "sit?"

*All.*—Christ.

*T.*—As what shall he sit?

*Several voices.*—As a refiner.

*T.*—Yes, he shall do something like what the refiner does. "He shall sit as a refiner and purifier." Repeat those words. (The children did so.) And what shall he do? (A pause.) "He shall purify his people." What shall he do?

*All.*—"He shall purify his people."

*T.*—"He shall purify his people, that they may offer to the Lord an offering in righteousness." Now, let me see; Christ is here spoken of as a refiner. What does a refiner do?

*C.*—Purifies silver.

*T.*—Yes, or any metal. But what does Christ purify?

*C.*—His people.

*T.*—Why do his people want purifying?

*C.*—Because they are sinners.

*T.*—Yes, because they are sinners. Which of these two things are we like? (Exhibiting the silver ore and the bright silver.)

*C.*—We are like the silver ore.

*T.*—What did we say of the ore?

*C.*—It is impure.

*T.*—Yes, it is mixed with impurities; and what part of us is so?

*C.*—Our hearts.

*T.*—How are our hearts like silver ore?

*C.*—They are sinful.

*T.*—Another word?

*C.*—They are hard.

*T.*—Again?

*C.*—"Stony," "mixed."

*T.*—With what are our hearts mixed?

*C.*—Mixed with sin.

*T.*—Give me a text which says that our hearts are mixed with sin? (A pause.)

"We are all as an unclean thing." Repeat that.

The children repeated the text.

*T.*—Well, now let us examine a little, and see what is mixed up with us, and what makes us impure. When you came here in the morning, and all knelt down, what ought your thoughts to have been?

*C.*—Pure.

*T.*—What should they have been about?

*C.*—About God.

*T.*—Whilst the prayer was being repeated, what should you have been thinking about?

*C.*—About God and heaven.

*T.*—Now, do not answer me; but all of you try and remember how you prayed this morning. (A pause.) What is continually mixed with your thoughts?

*C.*—Sin.

*T.*—During the Bible-lesson this morning, when you were repeating texts of Scripture, your thoughts were not, I fear, all about God; many of you were thinking about other things. If this be the case, what were your thoughts mixed with at that time?

*C.*—Sin.

*T.*—What are our thoughts too often mixed with when we are at church?

*C.*—Sin.

*T.*—Yes, sin is there also. What then are our thoughts?

*C.*—Sinful.

*T.*—Is it only our thoughts that are sinful? What besides?

*C.*—Our hearts are sinful.

*T.*—Tell me some things that make our hearts impure.

*Different Children.*—Anger—pride—lying—stealing.

*T.*—Yes, and many more; our hearts are mixed up with sin. Now what must be done to our hearts to make them pure? What was done to the silver ore?

*C.*—It was purified.

*T.*—From what was it separated?

*C.*—From its dross, its impurities.

*T.*—And what must the heart be separated from, in order to become pure. (A pause.) What are the impurities of the heart?

*C.*—Sins.

*T.*—What, then, must be separated from the heart?

*C.*—Our sins.

*T.*—Yes, the heart must be separated from sin; who only can do that?

*C.*—Jesus Christ.

*T.*—When he purifies the heart, who does he act like?

*C.*—The refiner.

*T.*—The text says, "He shall sit as a refiner and purifier of silver." Repeat those words. (The children obeyed.) "He shall purify his people." "And purge them as gold and silver." (Repeated.) Now, how is the silver purified?

*Several voices.*—By fire.

*T.*—How does Christ purify his people?

*C.*—"By his Word"—"by his Holy Spirit."

*T.*—Yes; but it is difficult to purify our sinful hearts; there is something Jesus is obliged to do to us. When you are naughty, and there is a great deal of what is wrong mixed up with your conduct—a great deal of inattention and disobedience, what do I do?

*C.*—You punish us.

*T.*—Why do I punish you?

*C.*—To make us good—pure.

*T.*—To make you better. Now tell me, what does Christ do to his people; how does he purify them?

*C.*—He punishes them.

*T.*—Tell me some punishment he gives his people. How does he punish?

*A little Boy.*—With brimstone and everlasting fire.

*T.*—Yes, but that is everlasting punishment; there are punishments which he sends to make us better whilst we are on earth. Do you know one?

*C.*—(After a pause.) Sickness.

*T.*—Yes; he lays us on a sick bed, that we may be led to seek Jesus. When you have been naughty, and are punished for it, what do you say?

*C.*—"I will be better." "I will be good."

*T.*—You say you will be good, and you ask to be forgiven; why does Christ send affliction upon his people?

*C.*—(After a pause.) That it may make them wish to be good.

*T.*—And what ought they then to do?

*C.*—To pray to God that they may become better.

*T.*—When sin tempts them again, what is Jesus obliged to do?

*C.*—To punish them again.

*T.*—And what does he wish to take from them by punishment?

C.—Sin.

T.—Then Christ sends affliction to purify them—to make them good. And all the time they are afflicted what does Christ do?

C.—He watches them.

T.—Yes, he watches them. Now I will repeat the text again: "He shall sit as a refiner and purifier of silver, and he shall purify his people, and purge them as gold and silver, that they may offer to the Lord an offering in righteousness." What ought they to become after their affliction?

Several voices.—Pure.

T.—Yes, more pure; then what is the affliction sent to do?

C.—To purify them.

T.—How does Christ sit?

C.—As a refiner.

T.—What do the afflictions which Jesus sends his people do to them?

C.—Purify them.

T.—How does the refiner know when the silver is pure?

C.—It reflects his image.

T.—How are Christ's people, when purified, like the silver?

C.—They reflect his image.

T.—Yes, they become more and more like Jesus. Now you understand how Jesus is like a refiner. Repeat together: "Jesus is the refiner of his people, and purifies their hearts from sin."

The visitors proceeded to the Juvenile School.

#### LESSON ON THE MONTH OF OCTOBER. GIVEN TO THE ADVANCE CHILDREN OF THE JUVENILE SCHOOL.

The Superintendent explained that this lesson differed from the other lessons in being rather an examination than a lesson. The object here was to induce the children to observe the changes which take place in the weather, and in the animal and vegetable world, and to reason upon them. This course of lessons formed a kind of natural history of the year. The teacher would question the children as to what they had observed during the month of October.

#### Sketch.

##### I.—General appearance of Nature.

Weather in the beginning of the month sometimes calm and mild; sometimes the gales which generally blow during the latter part of September, continue through the first week of October; heavy clouds, with bright gleams of sunshine, are often seen throughout the day; call attention to the brilliancy of their appearance, with the rising and setting sun. Upon the whole the weather is fine; twenty fine days are generally expected during the month.

##### II.—Signs of Winter.

1. The days become perceptibly shorter, and the mornings and evenings become gradually more chilly, change of clothing required.

2. Vegetation begins to lose its color; some leaves of trees and shrubs fall; those which remain assume an almost endless variety of color in their progress from green to brown. At no season of the year does nature present us with so many changes. This change of the leaves is chiefly owing to the gradual descent of the sap, which makes them dry. Having now served their purpose, as far as regards the tree, they fall off; but here their use does not end; when life ceases, they are soon decomposed, and their elements again return to the earth to enrich and prepare it for fresh vegetation.

The gradual disappearance of insects, and swallows, and other summer birds, together with the silence of the singing birds, though the notes of the robin and the blackbird are still heard.

Flocks of water-fowl, and other winter birds of passage, now return, driven from northern climates by the cold, and by want of food. Of these are the duck, the woodcock, the snipe, and others; the latter feed in soft, marshy places; the former are found in lakes and ponds. Call attention to the order of their flight, their instinct, the nature of their covering at this season, and then to the wisdom and goodness of Him who has created, and who watches over the whole.

### III.—*Farming and Gardening.*

1. Ploughing and sowing wheat.

2. Gathering in potatoes, turnips, beets. Felling timber.

3. Transplanting, collecting the remaining fruits, &c., &c.

*Teacher.*—What sort of weather have we generally during the month of October?

*Children.*—Changeable.

*T.*—When is the weather most settled?

*C.*—In summer and winter.

*T.*—What is the difference between summer and winter?

*C.*—It is warm in summer, and cold in winter.

*T.*—Does it pass at once from warm to cold?

*C.*—No, gradually.

*T.*—Which month of the autumn is October?

*C.*—The second.

*T.*—What difference would you expect to find between the weather in July and in October?

*C.*—It would be much the warmest in July.

*T.*—Yes. October and January would be about midway between summer and winter. But suppose we take the beginning of October, what sort of weather do we generally find then?

*C.*—Mild.

*T.*—Do you remember what the mornings are in September?

*C.*—Chilly.

*T.*—You remember that there are two periods of the year somewhat different from the rest. Generally speaking, it is mild early in October; but toward the end what is it?

*C.*—Cold.

*T.*—Yes, it is rather cold. What is the appearance generally, if we go out into the country and look at the sky?

*C.*—The sky is hazy, and the clouds are black and hide the sun.

*T.*—What difference is there, generally speaking, between the clouds in October, considering the month as a whole, and such as we have to-day?

*C.*—They are brighter and clearer in October.

*T.*—What sort of a cloud is this which we have to-day?

*C.*—A stratus cloud.

*T.*—Yes; what they call in the books a stratus cloud, covering the sky from end to end. If it be not a whole cloud, what do you call it?

*C.*—“Dispersed,” “parts of a cloud.”

*T.*—What do we see between the parts?

*C.*—Blue sky.

*T.*—And what besides?

*C.*—The sun peeping through.

*T.*—Yes, the sun peeping through. We have heavy clouds scattered through

the sky, but here and there we see the blue sky, and the bright sun peeping through. What have you observed, morning and evening, near the horizon?

C.—It appears like gold.

Another voice.—It is like clouds tinged with gold.

A third voice.—It is like a sea of gold.

T.—Yes; that is better still. Well, then, let me write this down: "The beginning of October is mild; toward the end it is rather cold;" and throughout the month we have—what sort of clouds?

C.—Broken clouds.

T.—With what peeping through?

C.—The sun and the blue sky.

T.—Now, we have said that the beginning is mild, and the end cold. What does that denote?

C.—The approach of winter.

T.—There are several other signs which denote the approach of winter. Let us take them in their order. To begin with the days. What do you observe in the days?

C.—They get shorter.

T.—What besides shorter?

C.—Colder.

T.—When is the cold chiefly felt?

C.—In the evening and in the morning.

The teacher then wrote on the slate: "The weather toward winter becomes cold and the days shorter."\*

T.—Do we make any changes in respect to ourselves?

C.—Yes; we put on warmer clothing.

T.—What does the fact of our being obliged to put on warmer clothing remind us of?

C.—The approach of winter.

T.—Now there is another important point. We have done with the first; the second is—

C.—The berries found in the hedges.

T.—We shall come to that presently. How do the fields look in July and August?

C.—Every thing is green.

T.—If we go out in the month of October, what do we see?

C.—The leaves are falling off the trees.

Another voice.—And they are getting yellow.

T.—"The leaves of the trees get yellow;" that is one point. The leaves also begin to fall off; but only very few. October is not the great month for the falling of leaves. They begin to fall, it is true; and what other change begins?

C.—They change in color.

A Boy.—Master, what makes the leaves change their color? Is it the cold?

T.—Keep that in mind, and ask me again presently. What is the color of leaves in July?

C.—Green.

T.—What in November?

C.—Brown or dark.

T.—While in their vigor what are they?

C.—Green.

T.—And when they fall off?

C.—Brown.

T.—Do they change at once from green to brown?

The slate was constantly used as facts were elicited, but it is not mentioned each time.



- C.—No, they get brown gradually.
- T.—Yes; and when you go out in October and look at the trees, what do you find with respect to color?
- C.—There are different shades; yellow, and light green, and brown.
- T.—From what color do they change?
- C.—From green to brown.
- T.—They assume a variety of colors as they pass from green to brown. Now, Thomas Jackson asked me just now why leaves change their color. Can any one tell him?
- C.—The sap is purified.
- T.—What made the leaves grow?
- C.—The sap.
- T.—When the sap goes, what takes place?
- C.—The leaf begins to fade.
- T.—Does all the color go at once?
- C.—No, gradually.
- T.—As the sap leaves it, what takes place in the leaf?
- C.—It withers away gradually.
- T.—What is the office of the leaf?
- C.—To purify the sap.
- T.—What becomes of the sap when it is purified?
- C.—It goes into the tree.
- T.—What use is the sap to the tree?
- C.—It is the nourishment.
- T.—What has the leaf lost?
- C.—Its nourishment.
- T.—And when it has no nourishment, what happens?
- C.—It must wither and die.
- T.—Yes; the sap being all gone, the leaf falls off. Is the leaf of service to the tree any longer?
- C.—No.
- T.—What has it done?
- C.—It has purified the sap.
- T.—Is it of any more service anywhere?
- C.—Yes; as manure.
- T.—The leaf decays, and becomes nourishment for—what?
- C.—The earth.
- T.—What a beautiful provision this is for restoring the richness that has been drawn out of the earth! You see nothing is thrown away by our great Creator. Tell me a lesson which the study of his works teaches us?
- C.—Not to be wasteful.
- T.—We have mentioned some of the changes which happen in October. Of what does the falling of the leaf remind us?
- C.—Of the approach of winter.
- T.—Now let us find something more reminding us of the approach of winter!
- C.—Some birds leave this country; they go to warmer countries.
- T.—You said that the mornings and evenings got colder, and we were obliged to change our clothes. What happens to the covering of animals?
- C.—It gets thicker.
- T.—Yes; that we know from the study of their natural history. What is the object of this?
- C.—To keep them warm.
- T.—Yes; and again we see the wisdom and goodness of God in his provision for the comfort of animals. There are some birds which leave our country, because it is too cold for them. What birds are these?

*C.*—The swallow.

*T.*—Yes; and what birds come to us?

*C.*—The solon goose, the woodcock, the snipe.

*T.*—Why are they obliged to come?

*C.*—Because the country which they come from is so cold.

*T.*—Yes; but there is another reason.

*C.*—Because they can get no food.

*T.*—Yes; these are the two things which always cause birds to migrate: want of food, and the necessity for a change of climate. What guides the birds in their migrations?

*C.*—Instinct.

*T.*—Who implanted this instinct?

*C.*—God.

*T.*—What are birds that come to us in winter called?

*C.*—Birds of passage.

*T.*—And when we see them arriving, what do they remind us of?

*C.*—The approach of winter.

*T.*—Now, if we were to go into the gardens at this season of the year, how should we see the gardener employed?

*C.*—In digging up the earth.

*T.*—What do you observe in gardens in autumn?

*C.*—The flowers are in seed.

*T.*—What is the use of the seed?

*C.*—To produce flowers next year.

*T.*—Do you recollect reading about a very fine old gentleman who came in with his hands full of something?

*C.*—Autumn.

*T.*—Yes; the autumn crops he had in his hand. What are these?

*C.*—Corn.

*T.*—Some fruits are gathered in October. How do people gather them?

*C.*—They have ladders, and they go up the trees with baskets.

*T.*—Why do they not shake the trees at once, and let the fruit fall off them?

*C.*—Because it would bruise the fruit.

*T.*—There is another employment of the gardener in October.

*C.*—Transplanting.

*T.*—Why does he transplant?

*C.*—That the plants may grow the better.

*T.*—Yes; but can you tell me another reason? What does he want for them when winter is approaching?

*C.*—Warmth.

*T.*—Does he take them from sheltered places and put them in a field?

*C.*—No.

*T.*—He knows that the winter is approaching, and he provides for the young and tender plants by putting them under cover, or in places of shelter. There is another reason for transplanting in autumn in preference to summer. What passes from plants when the sun shines much upon them?

*C.*—Moisture.

*T.*—Yes; they evaporate a quantity of moisture, and how do they then look?

*C.*—Dry and withering.

*T.*—By what means can they replenish the moisture they lose?

*C.*—The fibers of the root suck it up from the earth.

*T.*—Now when a plant is just removed, will the roots, do you think, act as well as they did when they were in their old situation?

*C.*—No.

*T.*—Now, then, try and find out why it is better to transplant plants in autumn than in summer. You know enough to tell me.

*C.*—Because in autumn they do not get rid of so much moisture, so it is not so much consequence if the roots do not suck up so much.

*T.*—Right; and when gardeners transplant in summer, why do they shade their plants?

*C.*—That there may not be so much moisture taken from them by the sun.

*T.*—Now, go over with me the indications of the approach of winter, which we have mentioned:—

1. The weather becomes cold.
2. The days get short.
3. The leaves change color and begin to fall.
4. The clothing of animals gets thicker.
5. Birds migrate.

(The time for this lesson expired before the teacher could work out the remaining subjects of his sketch.)

The visitors went next into the Students' training-room, to hear the remarks of the Head Master on the preceding lessons.

#### TRAINING ROOM.

*Head Master.*—What was the object of the first lesson?

*Students.*—To develop the idea of four.

*H. M.*—Can you tell me what we wanted the children to observe?

*S.*—To observe numbers for themselves.

*H. M.*—Our object in this first step was to cultivate the intuitive perception of number. You perceived that the teacher first directed the children to the objects as they were presented. What was done next?

*S.*—The name of the number was given.

*H. M.*—What next?

*S.*—The children themselves applied, or made use of the name learnt.

*H. M.*—Yes; the children were exercised in using the name to express the idea. Why was this done?

*S.*—To fix both on their minds.

*H. M.*—Can you tell me why a variety of objects were used?

*S.*—That they might obtain an abstract idea of the number.

*H. M.*—Yes; that they might see it did not belong to one set of objects, but might be applied to all. What was the subject of the second lesson?

*S.*—The first part was on a watch, for the children to observe its parts.

*H. M.*—What quality were they taught to observe in the second lesson?

*S.*—Crumbling.

*H. M.*—Can you tell me one principal object of early education?

*S.*—To cultivate observation.

*H. M.*—Is that the only object of early education?

*S.*—To strengthen all the faculties.

*H. M.*—Yes; to cultivate, strengthen, and direct the faculties. Where should we start?

*S.*—Where the child is.

*H. M.*—What do you mean?

*S.*—We ought to come down sufficiently low to take the child just at the point of his own experience.

*H. M.*—Yes; then to carry out the object of education, we must find the starting-point for our lessons in the child. Can you tell me where this starting-point is? or, in other words, what we find in the child made ready for our use?

*S.*—Observation through the means of the senses.

*H. M.*—Yes; in intellectual education we commence by availing ourselves of the activity of the senses. What are the senses doing for the child?

*S.*—Storing his mind.

*H. M.*—Yes; storing his mind with ideas, and exciting his interest in all around him. Now, what sort of lessons are best fitted for this work.

*S.*—Lessons which call the senses into active exertion.

*H. M.*—Yes, this is what we desire to effect, and therefore we employ lessons adapted for this purpose. Suppose a child were left to himself, and nature were not interfered with, would he in that case get ideas?

*S.*—Yes; no doubt, many.

*H. M.*—What then is the use of giving a child lessons on objects, instead of leaving him to find out their properties himself?

*S.*—If left to himself he often forms wrong ideas.

*H. M.*—He forms not so much wrong, as very vague, imperfect ideas. A little child observes, but then he observes very hastily; his mind flits from quality to quality, and his ideas are generally superficial and inaccurate. Now, such lessons as those you have witnessed on objects assist very much in correcting the hasty notions which children form when left to themselves; they also lead to accuracy of expression,—this they are peculiarly fitted to cultivate, if properly given. When children have acquired a correct idea, what should you do?

*S.*—Give them a correct name for it, the name standing for the idea.

*H. M.*—How will a child, taught in this way, regard words in reference to objects?

*S.*—As the signs of ideas.

*H. M.*—Yes; he will think of a word as the representative of something else—as the sign of an idea. But is the object merely to give the child correct ideas, and to teach him to use correct expressions? (A pause.) What do you think is the effect of his daily examining the objects around him, taking an interest in them, and being accustomed to look at them attentively? Will he not by these means be better prepared to look at things correctly, when he goes into the world? Will he not, in the best sense of the word, have his eyes opened to see what is going on around him, and his senses brought into activity? Perhaps nothing shows us better than this kind of teaching how much it is possible for children to do for themselves when trained to the habit of investigating, examining, and discovering for themselves, without continually depending upon the help of others. Did you observe what the teacher told the children when giving the second lesson?

*S.*—Only what they were not able to find out for themselves.

*H. M.*—Was there any thing brought before them which they could not find out for themselves?

*S.*—No, Sir.

*H. M.*—Then the answer amounts to this, that the teacher told them nothing. Is that what you mean?

*S.*—No, Sir; she told them the names.

*H. M.*—It was the teacher's business, in the first part of the lesson, that is, on the watch, merely to draw the children's attention to its different parts; and in the second lesson to the quality, which had to be developed by observation of the three objects; and when the teacher was satisfied that the ideas were gained, the names were given. Nothing but the names were given, and that not till the ideas had been gained by the children themselves. Did you observe whether or not the questions were all put singly and independently? (A pause.)

*S.*—Two or three times the questions depended very much on each other.

*H. M.*—Do you know what to call a set of questions, so framed as to lead children up to a point which the teacher desires them to reach?

*S.*—A series of questions.

*H. M.*—Yes; two, or three times the children were led to the point which the teacher had in view, by a series of questions depending on each other.

*H. M.*—What was the subject of the lesson in the most advanced portion of the infant school?

*S.*—Silver, and silver ore.

*H. M.*—What was the intention in choosing this subject?

*S.*—To illustrate a text of Scripture.

*H. M.*—Do you recollect how the teacher proceeded? What did she do first?

*S.*—She showed the first state of silver.

*H. M.*—What was that state?

*S.*—A state of impurity.

*H. M.*—What was the second point?

*S.*—That it was submitted to a refiner to purify it.

*H. M.*—First, there was the impure state of the ore; and, secondly, the process by which it was purified. What was the next point?

*S.*—The end accomplished by the purifying, the putting away of the dross, and leaving the silver pure.

*H. M.*—What quality did this give the silver which it did not possess before?

*S.*—It was reflective.

*H. M.*—Having got thus far, how did the teacher proceed?

*S.*—She read a text, and questioned the children upon it.

*H. M.*—Did she begin by explaining, in the usual way of teaching, what was meant by the refiner, and what was meant by the silver, and so on?

*S.*—No.

*H. M.*—Why not? Let us go over the lesson. She had, in a certain sense, told them this. The natural state of the silver, the process it underwent to purify it, the effects of this process, and the refiner's work, were the foundation on which the after part of the lesson proceeded. What did she bring out and build upon it? What were the religious ideas? First, the natural state of our own hearts, as they appear to Christ, the Refiner; secondly, that our great Refiner wishes to have us purified, and subjects us to a certain process, in order that we may be purified; thirdly, the result, moral purity, or the reflection of our great Refiner's image. What principle did the teacher thus illustrate? Why did she begin with silver before she proceeded to speak of moral purification? Was she able to make the silver and its two states better known to the children than the heart and its state by nature and grace?

*S.*—Yes. She had the objects before her.

*H. M.*—These were more obvious to a child, and were therefore made a stepping-stone to the spiritual truth. It is thus we proceed from what children know to what they do not know. Light is thrown upon the Bible, and the children associate with its study the pleasure derived from the study of natural objects.

*H. M.*—Our time is short—the subject of the lesson in the juvenile school was the calendar for October. What faculty of the mind did the children exercise?

*S.*—Memory.

*H. M.*—Yes, if you take the lesson of this day alone; but is that the usual aim of the teacher in his instruction? Is it memory only which is cultivated?

*S.*—No; the children are trained to the habit of observation, especially the observation of what is going on daily around them.

*H. M.*—Is there any difference between the observation thus cultivated and that cultivated at an earlier period?

*S.*—Yes.

*H. M.*—What is the main difference?

*S.*—The children in the one case make minuter observations than in the other, and the memory is more employed.

H. M.—Yes; the observation is decidedly more minute. Do you remark any other difference?

S.—It takes in a wider range.

*H. M.*—Yes; the sphere of observation with these children may be much extended. The appearance of the clouds, and what it indicates, the changes which take place in autumn, including those in the vegetable and animal world. The range of observation is not only much more extensive, but is also very much more minute in its character, and as you observe, the memory is more exercised. The instruction differs from that given to the younger children in this respect, that, instead of being called upon to observe single or isolated facts, the juvenile pupils are called upon to observe successions or chains of events, as they occur. To trace a number of phenomena to their causes, and observe the effects or the causes of others. Thus the judgment of the children is much improved, the memory strengthened, and the habit formed of reflecting upon natural events. In like manner we notice historical events as their anniversaries occur; for instance, the birthdays of great men, or their extraordinary actions.

## VIII. SCHOOL ARCHITECTURE.

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### HISTORICAL PREFACE.

At the National Convention of the Friends of Public Education, held in Philadelphia, on the 17th, 18th, and 19th of October, 1849, and of which Hon. Horace Mann was President, Prof. James Henry, Secretary of the Smithsonian Institution in Washington City, Hon. Elisha R. Potter, Commissioner of Public Schools of Rhode Island, and Greer B. Duncan, Esq. of New Orleans, were appointed a Committee to report to the next Convention on the subject of School Architecture, including the location, size, ventilation, warming, and furniture of buildings intended for educational purposes. At the second Convention held in Philadelphia, on the 23d, 24th, and 25th of August, 1850, and of which Rev. Dr. Nott, of Union College, was President, the following Report, prepared by Mr. Potter, of Rhode Island, was submitted by Prof. Henry, with some introductory remarks on the general subject of American Architecture. The Report was ordered to be printed with the Proceedings of the Convention.

### REPORT.

The subject of School Architecture has not, till within a comparatively recent period, received that attention from the public generally, or from practical educators in particular, which its important bearings, direct and indirect, on the health, manners, morals, and intellectual progress of children, and on the health and success of the teacher, both in government and instruction, demand. The earliest publication on the subject in this country, which has met the notice of the Committee, may be found in the *School Magazine*, No. 1, published as an Appendix to the *Journal of Education*, in April, 1829. In 1830, Mr. W. J. Adams, of New York, delivered a lecture before the American Institute of Instruction, "on *School houses and School Apparatus*," which was published in the first volume of the transactions of that association. Stimulated by that lecture, the Directors of the Institute in the following year offered a premium of twenty dollars for the best "*Essay on the Construction of School-houses*." The premium was awarded by a committee of the Institute to the Essay by Dr. William A. Alcott, of Hartford, Conn., now residing in West Newton, Mass. This "*Prize Essay*" was published in the second annual volume of lectures before the Institute, as well as in a pamphlet, and was widely circulated and read all over the country. In 1833, the Essex County Teachers' Association published a "*Report on School-houses*" prepared by Rev. G. B. Perry, which is a searching and vigorous exposure of the evils resulting from the defective construction and arrange-



ment of School-houses. From this time the subject began to attract public attention, and improvements were made in the construction and furniture of school-rooms, especially in large cities and villages.

In 1838, Hon. Horace Mann submitted a "*Report on School-houses*," as supplementary to his First Annual Report as Secretary of the Board of Education in Massachusetts, in which the whole subject, and especially that of ventilation, is discussed with great fullness and ability. This Report was widely circulated in a pamphlet form, and in the various educational periodicals of the country, and gave a powerful impulse to improvement in this department, not only in Massachusetts, but in other states. In the same year, Hon. Henry Barnard prepared an "*Essay on School Architecture*," in which he embodied the results of much observation, experience and reflection, in a manner so systematic and practical as to meet the wants of all who may have occasion to superintend the erection, alteration, or furnishing of School-houses. This Essay was originally prepared and delivered as a lecture in the course of his official visits to different towns of Connecticut, as Secretary of the Board of Commissioners of Common Schools. It was first published in 1841, in the Connecticut Common School Journal, and in 1842 was submitted, with some modifications and numerous illustrations, as a *Report on School-houses*, to the Legislature. It may be mentioned as an evidence of the low appreciation in which the whole subject was regarded at that time, in a State which prides herself on the condition of her common schools, and on the liberality with which her system of public education is endowed, that the Joint Standing Committee on Education, on the part of the Senate and House, refused to recommend the publication of this Essay, although it is by far the most thorough, systematic and practical discussion of the subject which has appeared in this country or in Europe. And it was only through the strenuous efforts of a few intelligent friends of school improvements that its publication was secured, and then, only on condition that the author should bear the expense of the wood-cuts by which it was illustrated, and a portion of the bill for printing. Since its first publication more than one hundred thousand copies of the original Essay have been printed in various forms and distributed in different states, without any pecuniary advantage to the author.

In 1842, George B. Emerson, Esq., in Part Second of the *School and Schoolmaster*, devoted a chapter to "The School-house," in which sound and practical views of the location, size, and ventilation and warming of edifices for school purposes, are presented and illustrated by appropriate cuts. A copy of this valuable work was presented to each of the 11,000 school districts in the State of New York, and each of the 3,400 districts in Massachusetts. In 1846, Nathan Bishop, Esq., Superintendent of Public Schools in the City of Providence, published a Report on the School-houses of that city, with numerous wood-cuts illustrative of the peculiarities of the furniture and internal arrangements of the buildings devoted to each grade of school. These houses were constructed after an examination of the latest improvements which had been introduced in the School-houses of Boston, Salem, and other large cities and villages in Massachusetts, and have been much consulted by committees and builders as models.

In 1848, Mr. Barnard republished his Essay, with plans and descriptions of numerous School-houses which had been erected under his direction, in Rhode Island and Connecticut, and including by permission all of the plans of any value, which had been published by Mr. Mann, Mr. Emerson, Mr. Bishop, and other laborers in this field—with the title of "*School Architecture, or Contributions to the Improvement of School-houses in the United States*." As the title conveys a very inadequate view of the fullness and completeness of this valuable work, the Committee

feel that they can not better promote the object of their appointment than by calling the attention of the Convention to the general views with which the subject was approached by this Author, and to the table of contents which will be found appended to the extracts which we have been permitted to make from this volume.

"The subject was forced on the attention of the author in the very outset of his labors in the field of public education. Go where he would, in city or country, he encountered the district School-house, standing in disgraceful contrast with every other structure designed for public or domestic use. Its location, construction, furniture and arrangements, seemed intended to hinder, and not promote, to defeat and not perfect, the work which was to be carried on within and without its walls. The attention of parents and school officers was early and earnestly called to the close connection between a good school-house and a good school, and to the great principle, that to make an edifice good for school purposes, it should be built for children at school, and their teachers; for children differing in age, sex, size, and studies, and therefore requiring different accommodations; for children engaged sometimes in study and sometimes in recitation; for children whose health and success in study require that they shall be frequently, and every day, in the open air, for exercise and recreation, and at all times supplied with pure air to breathe; for children who are to occupy it in the hot days of summer, and the cold days of winter, and to occupy it for periods of time in different parts of the day, in positions which become wearisome, if the seats are not in all respects comfortable, and which may affect symmetry of form and length of life, if the construction and relative heights of the seats and desks which they occupy are not properly attended to; for children whose manners and morals, whose habits of order, cleanliness and punctuality,—whose temper, love of study, and of the school, are in no inconsiderable degree affected by the attractive or repulsive location and appearance, the inexpensive outdoor arrangements, and the internal construction of the place where they spend or should spend a large part of the most impressible period of their lives. This place, too, it should be borne in mind, is to be occupied by a teacher whose own health and daily happiness are affected by most of the various circumstances above alluded to, and whose best plans of order, classification, discipline and recitation, may be utterly baffled, or greatly promoted, by the manner in which the School-house may be located, lighted, warmed, ventilated and seated. With these general views of school architecture, this essay was originally written."

The volume will be found on examination to contain:

1. An exposition, from official documents, of common errors in the location, construction, and furniture of School-houses as they have been heretofore almost universally built, even in states where the subject of education has received the most attention.
2. A discussion of the purposes to be answered, and the principles to be observed, in structures of this kind.
3. Descriptions of a variety of plans, adapted to schools of every grade, from the Infant School to the Normal School, in a variety of styles, having a Gothic, Elizabethan, or classic character, and on a large or small scale of expense; either recommended by experienced educators, or followed in buildings recently erected in this country or in Europe.
4. Numerous illustrations of the most approved modes of constructing and arranging seats and desks, and of all recent improvements in apparatus for warming and ventilating school-rooms and public halls generally.
5. A catalogue of maps, globes, and other means of visible illustration, with which each grade of school should be furnished, with the price, and place where the several articles can be purchased.
6. A list of books, with an index or table of contents to the most impor-

tant volumes on education, schools, school systems, and methods of teaching, suitable for school libraries, with reference to catalogues from which village libraries may be selected.

7. Rules and regulations for the care and preservation of School-houses, grounds, and furniture.

8. Examples of exercises suitable to the dedication of School-houses to the sacred purposes of education.

9. A variety of hints respecting the classification of schools.

It will not be necessary to specify further the official reports and periodicals in which the subject has been discussed within a few years past, or to mention in detail the various improvements which have been introduced in the construction of school furniture, and in modes of ventilation and warming. Most of the plans which have been brought before the public, and which have been found on trial to be valuable contributions to plans before published, are embodied in the recent editions of Mr. Barnard's work. In conclusion, the Committee beg leave to present the following summary of the Principles of School Architecture, which the author of that work has drawn up at their request, as presenting the result of his observations and practical knowledge in this department of educational improvement. He has also placed at the disposal of the Committee numerous plans for schools of different grades, selected from his book, or prepared for subsequent editions, which are herewith communicated as a part of this Report.

*Philadelphia, Aug. 23, 1850.*

The above Report was published as an Introduction to an abridgment of this work, under the title of Practical Illustrations of the Principles of School Architecture, and is adopted in this revised and enlarged edition, of the original treatise, because it contains not only a brief and accurate sketch of the various publications on the subject of School Architecture, but a summary of the aims and contents of this article:

## PRACTICAL ILLUSTRATIONS.

In treating of School Architecture, it will be convenient to present—

- I. Common Errors to be avoided.
- II. General Principles to be observed.
- III Plans and directions for erecting and fitting up school-houses adapted to the varying circumstances of country and city, of a small, and a large number of scholars, of schools of different grades and of different systems of instruction.

### L COMMON ERRORS IN SCHOOL ARCHITECTURE.

Under this head it will be sufficient to enumerate the principal features of school-houses as they are.

They are, almost universally, badly located, exposed to the noise, dust and danger of the highway, unattractive, if not positively repulsive in their external and internal appearance, and built at the least possible expense of material and labor.

They are too small. There is no separate entry for boys and girls appropriately fitted up; no sufficient space for the convenient seating and necessary movements of the scholars; no platform, desk, or recitation room for the teacher.

They are badly lighted. The windows are inserted on three or four sides of the room, without blinds or curtains to prevent the inconvenience and danger from cross-lights, and the excess of light falling directly on the eyes or reflected from the book, and the distracting influence of passing objects and events out of doors.

They are not properly ventilated. The purity of the atmosphere is not preserved by providing for the escape of such portions of the air as have become offensive and poisonous by the process of breathing, and by the matter which is constantly escaping from the lungs in vapor, and from the surface of the body in insensible perspiration.

They are imperfectly warmed. The rush of cold air through cracks and defects in the doors, windows, floor and plastering is not guarded against. The air which is heated is already impure from having been breathed, and made more so by noxious gases arising from the burning of floating particles of vegetable and animal matter coming in contact with the hot iron. The heat is not equally dif-

fused, so that one portion of a school-room is frequently overheated, while another portion, especially the floor, is too cold.

They are not furnished with seats and desks, properly made and adjusted to each other, and arranged in such a manner as to promote the comfort and convenience of the scholars, and the easy supervision on the part of the teacher. The seats are too high and too long, with no suitable support for the back, and especially for the younger children. The desks are too high for the seats, and are either attached to the wall on three sides of the room, so that the faces of the scholars are turned from the teacher, and a portion of them at least are tempted constantly to look out at the windows,—or the seats are attached to the wall on opposite sides, and the scholars sit facing each other. The aisles are not so arranged that each scholar can go to and from his seat, change his position, have access to his books, attend to his own business, be seen and approached by the teacher, without incommoding any other.

They are not provided with blackboards, maps, clock, thermometer, and other apparatus and fixtures which are indispensable to a well regulated and instructed school.

They are deficient in all of those in and out-door arrangements which help to promote habits of order, and neatness, and cultivate delicacy of manners and refinement of feeling. There are no verdure, trees, shrubbery and flowers for the eye, no scrapers and mats for the feet, no hooks and shelves for cloaks and hats, no well, no sink, basin and towels to secure cleanliness, and no places of retirement for children of either sex, when performing the most private offices of nature.

LEST the author should be thought to exaggerate the deficiencies of school-houses as they have been heretofore constructed, and as they are now almost universally found wherever public attention has not been earnestly, perseveringly, and judiciously called to their improvement, the following extracts from recent official school documents are inserted, respecting the condition of school-houses in states where public education has received the most attention.

#### CONNECTICUT.

##### EXTRACT from the "First Annual Report of the Secretary of the Board of Commissioners of Common Schools for 1838-39.

"In the whole field of school improvement there is no more pressing need of immediate action than here. I present with much hesitation, the result of my examinations as to several hundred school-houses in different parts of the State. I will say, generally, that the location of the school-house, instead of being retired, shaded, healthy, attractive, is in some cases decidedly unhealthy, exposed freely to the sun and storm, and in nearly all, on one or more public streets, where the passing of objects, the noise and the dust, are a perpetual annoyance to teacher and scholar,—that no play-ground is afforded for the scholar except the highway,—that the size is too small for even the average attendance of the scholars,—that not one in a hundred has any other provision for a constant supply of that indispensable element of health and life, pure air, except the rents and crevices which time and wanton mischief have made; that the

seats and desks are not, in a majority of cases, adapted to children of different sizes and ages, but on the other hand are calculated to induce physical deformity, and ill-health, and not in a few instances (I state this on the authority of physicians who were professionally acquainted with the cases,) have actually resulted in this—and that in the mode of warming rooms, sufficient regard is not had either to the comfort and health of the scholar, or to economy.

That I have not stated these deficiencies too strongly, I beg leave to refer you to the accompanying returns, respecting the condition of school-houses in more than eight hundred districts in the State, and in more than forty particulars in each. These returns were made from actual inspection and measurement of school-houses by teachers and others. An abstract of them in part will be found annexed, together with extracts from letters received from school officers on the subject. I might accumulate evidence of the necessity of improvement here for every district in the State. Without improvement in many particulars which concern the health, the manners and morals of those who attend school, it is in vain to expect that parents who put a proper estimate, not only on the intellectual, but the physical and moral culture of their children, will send to the district school.

The following extracts are taken from official documents, published in 1846 and 1847, and fair specimens of the manner in which school-houses are spoken of, in the reports of local committees, from different parts of the State.

"In one district the school-house stands on the highway, with eighty pupils enrolled as in attendance, in a room nineteen and a half feet square, without any outbuildings of any kind.

In another in the same town, the school-house is less than seven feet high, and the narrow slab seats are twenty-one inches high, (four inches higher than ordinary chairs.) The walls, desks, &c., are cut and marked with all sorts of images, some of which would make heathens blush.

In another, the room is fourteen feet square, and six feet five inches high. The walls are very black."

"In this town there is one of the most venerable school servants in the State. The room is small, and less than seven feet high. Slab seats extend around three sides of the room, and are too high for men. The skill of several generations must have been expended in illustrating the walls with lamp smoke and coal images. The crevices of the floor will admit any quantity of cold air. The door sill and part of the house sill have rotted away. The day I visited it, the teacher and pupils were huddled around the stove."

"In one district, the house stands near the travelled road, is low and small, being only seventeen feet by seventeen, and seven feet two inches high, for the accommodation of sixty or seventy pupils. The seats on the outside are from seventeen to eighteen inches. The walls, door, and sides of the house are disfigured with obscene images."

"There are only three good school-houses in the society; only three that have any out-houses. The rest of the school-houses are in a miserable condition. One is thirty-five or forty years old. Most of them have only slab seats, with the legs sticking through, upwards, like hatchet-teeth, and high enough to keep the legs of the occupants swinging. They are as uncomfortable to little children as a pillory. Seats and desks are adorned with every embellishment that the ingenuity of professional whittlers can devise."



"Two of our school-houses, those in the two largest districts, are in a bad condition, old, unpainted and inconvenient. They are built and constructed *inside* on the old Connecticut plan. Only one row of desks, and that fastened to the wall of the school-room, running quite around it; and long forms, without backs to rest on, the scholars sitting with their backs to the centre of the room. The other two are in better condition, though one is constructed on the same plan as above. The out-buildings are in bad condition generally. One school-house has no out-building nor wood-house. One school-house only is painted outside."

"Of the nine school-houses in this society, not one is really what they all ought to be, for the morals, health, and intellectual improvement of the pupils. Four of them are considered tolerably good, having one out-building; the other five are hardly passable. The desks in most or all of them are where they never ought to be, against the sides of the room and against one end, and with few exceptions, all of a height, with poor accommodations for loose clothes, hats, &c.; all located on or near some highway; no play-ground attached to any of them, except the highway."

"A part of our school-houses are comfortable buildings, but destitute of every thing like taste or ornament in the grounds, structure, or the furniture of the rooms. Being generally built in the public highway or close by its side, they are, one and all, without enclosures, ornamental or shade trees. But the want of ornament is by no means the greatest defect of our school-houses; a majority of them are not convenient. Although there has been some improvement in those recently built, yet they are not so good as would be desirable. The out-buildings in too many cases are in a neglected condition, and in some districts are not provided at all, indicating an unpardonable neglect on the part of parents and guardians."—*East Windsor*.

"It appears that a great proportion of the school-houses are in a sad condition and of bad architecture. Architectural drawings should, therefore, be scattered over the state, so that in the buildings to be erected those abominations may be avoided which are now so abundant."—*Glastenbury*.

"The internal construction of most of our school-houses is bad, and occasions great inconvenience and hindrance to the prosperity of our schools. Let as much be done as can be, to remove those miserable prison-houses for our children, and in their stead let there be good, large, and convenient school-houses."—*Suffield, 2d*.

"None of our school-houses have play-grounds attached; they generally stand in the highway, and some on a corner where several roads meet."—*Bethany*.

"Another evil is the poor, cold, inconvenient and gloomy school-houses which we find in many districts. There is one in this society not more attractive than a barn, for comfort and accommodation in a cold day: the best I can say about it is, it is thoroughly ventilated."—*Lebanon, 4th*.

"The houses and the internal arrangement are inconvenient; a slanting board the whole length of the house for a desk, and a slab-board for a seat so high that the scholars cannot reach the floor with their feet, constitute the conveniences of half of the schools in this society."—*Easton*.

"We see many a school-house which looks more like some gloomy, dilapidated prison, designed for the detention and punishment of some desperate culprit, than a place designed for the intellectual training of the children of an enlightened and prosperous nation. Instead of being ren-



dered pleasant and attractive to the youthful mind, they are almost as cold and cheerless as an Indian wigwam."—*Chaplin*.

"Many of our school-houses are in a miserable condition, possessing less attractions outwardly than our prisons, while within they are dark, gloomy and comfortless. They are all destitute of an appearance of any out-house."—*Warren*.

"The general plan of all the school-houses is the same. Writing desks are placed around the room against the walls; these are generally so high that it would be inconvenient for adults, much more for children to use them. The seats stand in front of these, so that the pupil has his option to sit with his face or his back to the teacher. In the former case, he has the edge of the writing desk to support his back; in the latter, nothing. An arrangement like this is the worst possible. Of the five school-houses in the society, two may be warmed so as to be comfortable at all times; a third needs nothing but a good stove; but the remaining two cannot be made fit for a school to occupy without thorough repairs. There is but one out-building of any kind connected with the school-houses of this society; and this is entirely unfit for use."—*Winchester*.

"Throughout Middlesex county the school-houses, taken as a whole, are several degrees below respectability—rarely ever painted within or without, and if painted at all, they ever afterward show a worn and weather-beaten coat, like the half starved, half clothed outcast of society. Yet these houses are owned by the public, worth its tens of thousands, and they groan grievously if a small tax is levied to improve them. Of the four locations of school-houses in this town, not one has sufficient land for a private dwelling, and all the land combined would be less than an acre. One stands wholly on the highway; another stands on a bleak and rocky elevation, and during some portions of the winter, almost inaccessible. This location was chosen probably because it was cheaper than the pleasant field on the opposite side of the way. Why should the public school-house which accommodates from thirty to fifty pupils, ten and eleven months in the year, five and a half days of each week, not require as much land as a church or private dwelling?"—*Chester*.

"Our school-houses are not what they ought to be either in their location or construction. In their location they are generally found upon some barren knoll, or too near the highway, forming part of the fence between the highway and the adjoining proprietor, alike destitute of ornament or shade calculated to render them pleasing or attractive. The desks are almost always too high and continuous, instead of single, nor is there generally a gradation in reference to the size of the scholar. Few school-rooms are well ventilated; not more than one or two properly or healthfully warmed; the consequence is unnecessary frequency of colds, headaches and ill health."—*Tolland*.

The Superintendent (Hon. Seth P. Beers) of Common Schools, thus introduces the subject in his Annual Report for 1848.

"The reports of school visitors from every part of the state speak in strong terms of condemnation of the deplorable condition of many district school-houses. The progress of renovation and improvement in this department has not been as rapid or as thorough, during the past year, as in other sections of New England, or as the true interests of the common schools imperiously demand. Badly located school-houses still "encumber the highway,"—"without shrub or shade-tree around,"—"without

play-ground, yard, or out-house, mat or scraper,"—"without means of ventilation and uniform temperature,"—"with seats too high and destitute of support for the back,"—"with desks attached to three sides of the room,"—"with windows destitute of glass,"—"clapboards hanging loose,"—"blinds propped up to be kept in their places,"—"the wood without shelter," and "the stove without a door." These are specimens of the language used by school visitors in describing the places where the children of Connecticut are receiving their early training in taste, manners, morals, and health,—language which it is hoped will touch the pride of the districts, and lead to some efficient action on the subject."

"How surprising and disgraceful is the fact, that a very large proportion of the school-houses of our state present vastly fewer attractions, in point of comfortable arrangement and tastefulness, than are seen about our poor-houses, our jails, and our state penitentiary! This remark is too true of the school-houses in this society. They are all located directly on the road or in it, with hardly a shrub or shade-tree around any one of them; and with no play-ground except the highway, which the children, in several districts, have to share in common with geese and swine. Of their external condition nothing very creditable or gratifying can be said. Six, of the nine school-houses in this society, are wooden ones, and they generally bear a time-honored, weather-beaten aspect. Unpainted and blindless, with clapboards agape to catch the winds of winter, and window-panes rattling, or fallen from the decayed sash, they present a most forlorn and gloomy aspect, which, to say the least, is not very well suited to woo the youthful mind, and fill it with pleasant fancies. One, unacquainted with their original design, might mistake them for the abodes of the evil genii, which would naturally be supposed to haunt the dreary solitudes which surround them.

The internal condition of these school-houses is in perfect keeping with the external. In several of them, the plastering is broken and missing, to say nothing of the dark and dingy color of what remains. The stoves are smoky, and the benches and desks are so high as to be better adapted to the children of a race of giants, than to those of the present generation; and these are hacked and gashed by the pupils, as if in retaliation for the torture suffered from them. My compassion has been deeply moved as I have frequently entered these abodes of suffering, and seen their unhappy inmates—the children of protestant parents—doing penance upon their high seats, with no support to their backs but the soft edge of the projecting board which forms the desk, and with their feet dangling in mid-air several inches from the floor. And when I have looked upon these youthful sufferers, thus seated and writhing with pain, the question has often arisen in my mind, what have these ill-starred children done that they should be doomed to so excruciating torture? What rank offenses have they committed that they should thus be suspended between the heavens and earth for six hours each day? And from deep-felt pity for the innocent sufferers, I have sometimes wished (perhaps it was cruel) that their parents had to sit for one hour in a similar position, that they might learn how to pity their children, and be prompted to attend to their health and comfort in the internal arrangement of the school-room.

Add to all this the fact, so outrageous to common decency, that most of these school-houses have no out-buildings whatever attached to them; and does not the case appeal movingly to the friends of humanity, and demand prompt and decisive measures of reform? Is it not passing strange, that while many parents incur considerable expense in providing themselves with cushioned and carpeted slips in church, where they ordi-

narily spend, perhaps, but three hours each week, they should be so utterly regardless of the comfort and happiness of their offsprings in the school-room?"—*Bloomfield*.

"Three of the houses are located in the highway; an excellent device for saving land, but a miserable one for the comfort, safety and improvement of children. In selecting sites for the new houses, recently erected, a good degree of space fronting was provided for. Only two houses have blinds or shutters; all the others give full scope for the sun to see what is going on in the school-room, often to the manifest annoyance of the children and teacher; unless, perchance, the latter has genius enough to convert a stray newspaper, or some other available article, into a temporary curtain to shut him out."—*Manchester*.

"Our school-houses, though not cold and leaky, are very badly constructed within, and are therefore very inconvenient. Two of them stand mostly in the highway, so that one passing in a carriage or on horseback may look in upon the whole school, and as a matter of course the scholars will look at whatever passes. When the school-house is so exposed, it would seem, that modesty in our children would require the convenience of good out-houses; but this is not the case with any two school-houses in the town. We have urged the importance of these things, but with poor success."—*Suffield, 2d*.

"There are some houses unfit for their purpose; the weather-boards are starting off, "and the wind enjoys quite freely the luxury of coming in and being warmed by the fire; and the dear children suffer much between a cold northwester and a red-hot stove." It is very common to find the school-houses mutilated by the cuttings of obscene figures; this should draw forth the unqualified censure of proprietors and teachers. Further, there are cases where there are no out-houses for the use of children. This is a sore evil, and ought to be remedied immediately."—*Groton*.

"Among the ten school-houses in this district are several very good buildings; but, taking in view the size and proportions of the edifices, the internal arrangement, the fitness of the seats and desks for the object designed, we feel impelled to say, that in our opinion there are no very good school-houses. In some of the districts it is said the people are obliged to go among strangers to procure teachers, on account of the shabbiness of the school-houses."—*Brooklyn*.

"Not more than one-half of our school-houses in this society are very good, if, indeed, they can be termed more than comfortable. The remainder are bad, some of them very bad, exhibiting nothing of comfort or convenience. In some of them, there are no desks fit to be used for writing purposes. The seats are so constructed as to afford no place to rest the back, or, in some cases, even the sole of the foot. Many of the schools are destitute of out-houses. Some of them have no conveniences for hanging up the hats or clothes of the children, or even to shelter the wood from the weather. And more than half our school-houses are destitute of black-boards, a fact alike discreditable to the district and to the teachers who have served in them."—*Stafford, 1st*.

"It appears from the superintendent's report for 1847, that of 1663 school-houses in the state, 873 have out-houses, and 745 have none! This fact is, undoubtedly, a burning shame and a deep disgrace to the state. It is unworthy of a civilized country, and indicates a state of things that ought to exist only among savages. The committee are happy to say that we have little or no share in this shameful fact: but our school-houses are, by no means what they should be, and call for improvement.

They are generally on or in the street, whereas every building devoted to such a purpose ought to be in a retired situation, with suitable yards for play-grounds, and convenient fixtures. The windows in some do not let down from the top, and therefore are not properly ventilated. In only two out of eight school-houses are the benches what they should be. Large desks running around the room for the older scholars ought to be wholly discarded as intolerable nuisances. The scholars are of necessity always looking into the street; the windows can be opened only by climbing over the benches and desks. The scholars' backs are turned toward the teacher; they sit close together, and of course are often whispering. Large girls can leave their seats only by placing their feet on a level with their hips, which it is not always best that females should do. The smaller benches often have backs that are so low as to be of little service. Every school-house ought to be provided with a single desk for each pupil, and every pupil ought to have a slate and books to keep in the desk."—*Vernon.*

The following extracts are taken from the Annual Reports for 1849.

"The school-houses are not what they should be. Some of them are decidedly bad. They are neither convenient nor pleasant. The benches and desks are inconvenient. Some of the small scholars are reduced to the miserable necessity of swinging in the air, without being able to either get a foothold or a place to rest their backs against. Ventilation is not attended to. Every school-room should be so constructed that it can be freely ventilated, so that the scholars may have pure atmospheric air to breathe. This every one must appreciate, who knows the value of health, and does not wish to see a generation of sickly drones coming on to the stage. As a general thing, the external appearance of the school-houses is bad. A stranger passing through a district, can easily select the school-house. If you see a very unique-looking building, a "squatter" in the highway, or standing by permission on the side of some lot, in a corner rendered useless by a location on the border of some swampy moor, or on some arid field, where no vestige of life is—that you may conclude is the district school-house. That is the place where our children are to resort, during three-fourths of the first sixteen years of their lives, to get an education. Such are the associations with their early, perhaps all their education! Why is not the district school the place where correct taste should be demonstrated? Impressions will be made, and if they ever yield to good taste, school-house associations, in their present state, will not deserve the credit."—*Enfield.*

"Our school-houses are in a bad condition. Look into the school some warm, comfortable day, when the children are more likely to be in attendance, and if you please, walk in and breathe a specimen of the air in a New England unventilated school-house. If you are a well-bred man, you must do violence to your kind feelings, when you take a seat and look around and find that the teacher has nothing left for his accommodation but a standee; our school-houses are literally jammed full, i. e. the seats—any attempt at improvement is voted down on account of the cost."—*South Windsor, Wapping.*

"One district, for a wonder, occupied a new school-house; but while it is excellent, compared with the old one, it is contemptible, if not wicked, compared with what it ought to be. The only plan about it seems to be, the minimum scale of expenditure. Its dimensions are too limited even for so small a school. The desk or counter is uniform, and attached to three sides of the room, and almost out of the tallest scholar's reach! I have protested to the district, and possibly they will lower the counter,

some time or other. The other districts need new school-rooms, and some talk of building."—*Wolcott*.

"In regard to the school-houses in our five districts, only one can be said to be very good. Another, recently repaired, may be called good in a qualified sense; while the remaining three are quite ordinary, if not bad. This neglect to provide neat and comfortable school-houses, doubtless has a tendency to dampen the ardor of children in literary pursuits, and in various ways to retard their progress."—*Plainfield*.

"The school-room in the third district presents the same unsightly appearance which it has in years past; and from the height to which the writing desks, and slabs used for seats, are elevated, some persons would naturally infer that they were originally designed for a race of giants."—*Pomfret, Abington*.

"Most of the school-houses are in a bad condition, being old, ill-constructed, and inconvenient. Especially is this the case with regard to the interior of some of them, the seats of which are too high for the comfort of the scholars, with nothing to rest the back against, except the sharp edge of a plank or board, which serves as a writing desk, and this placed so high as to bring the arm to an unnatural and uneasy position when attempting to write. The school-houses, too, with one or two exceptions, stand in the highway, many within a few feet of the traveled path, with windows looking directly upon it, so that the attention of the scholar is necessarily attracted to every passer-by, thus diverting his attention from his studies, retarding his progress, and annoying his teacher."—*Litchfield, Milton*.

The Annual Report of the Superintendent of Common Schools for 1850 contains the following remarks on the condition of the school-houses.

"If any reliance can be placed on the representations made by teachers and school visitors from two hundred and four out of the two hundred and seventeen school societies in the state, as collected from written communications to this department in the course of the last four years, a majority of our school-houses are badly located, badly ventilated, imperfectly warmed in winter, having uncomfortable seats and desks, without apparatus except a black-board, and destitute of the most ordinary means of cleanliness and convenience. To this overwhelming mass of testimony (Appendix G) as to the necessity of immediate and thorough improvement in this portion of the educational field, I will here add an extract from a communication by a teacher of much experience and distinction, who received his education and commenced his experience in teaching in the district schools of this state. His remarks refer to the condition of school-houses in a single county—to three-fourths of which he had just made a personal visit."

"**OLD SCHOOL-HOUSES.**—These are the Antiquities of Connecticut, rude monuments of art, that must have had their origin coeval with the pyramids and catacombs, for aught we can learn to the contrary, save by the uncertain information of tradition. "It always stood there," says "the oldest inhabitant," when asked the date of the erection of one of them. Little brown structures of peculiar aspect, meek, demure, burrowing in some lone, damp and depressed spot, or perchance perched on the pinnacle of a rock, as if too contemptible and abject to occupy a choice piece of earth,—exposed to the remorseless winds of winter, and the fervid rays of

summer,—at one end a narrow and dingy entry, the floor covered with wood, chips, stones, hats, caps, odd mittens, old books, bonnets, shawls, cloaks, dirt, dinner baskets, old brooms, ashes, &c., all thrown together in the order as here catalogued,—the principal room retaining its huge stone chimney, which for generations boasted its ghastly fire-place, affording a ready oblivion to annual piles of green and snow-soaked wood,—the burnt, smoked, scratched and scrawled wainscoting,—the battered and mutilated plastering,—the patched windows,—the crippled and ragged benches,—the desks which have endured a short eternity of whittling,—the masses of pulverized earth in constant agitation, filling the throat, eye and nostrils of the inmates,—the unmistakable compound of odors which come not from “Araby the blest”—all point to the remote antiquity of these buildings, and intimate the veneration in which they are held. That some of these structures are always to remain, does not seem to admit of a “reasonable doubt.” The records of their origin, as we have seen, are gone, and the testimony of the past few generations is conclusive that no change has been effected in their appearance from a remote period; hence the deduction that they are among the “things to remain,” and never to pass away. Though the “annual miracle of nature” may not be vouchsafed to preserve them, yet, like the monuments of the American Indians which receive their annual votive offering of stones, and are thus rendered imperishable, so these “antiquities,” receiving their semi-occasional patches upon windows, upon clapboards, roofs and floors, together with the autumnal embankment of earth around their base, and all these given and received obsequious to the annual solemn votes of the district,—stand, despite the advance of public opinion, the “war of elements,” and “the tooth of time.”

**MODERN SCHOOL ARCHITECTURE.**—It is much to be regretted that a work similar to “Barnard’s School Architecture” had not been issued and circulated throughout the state some ten years ago, that such as have since that time erected new houses, (that are to stand forever,) might have consulted approved models for the size and forms of their structures, and improved plans for their internal arrangements. It would seem, however, that enough had been said by the author of that work in his annual reports, and occasional addresses in the state, to have excited interest sufficient in those intending to build new houses, to extend their inquiries and observations beyond the limits of their own district, and beyond the pattern of their own recently condemned school-house, and at least to select suitable locations for houses and necessary out-buildings, if not for a yard and play-ground.

The material changes observed in the construction of new houses about the county, consist in placing the *end* of the building toward the street instead of the *side*, and giving a very narrow entry across the end of the building,—affording, in some instances, two entrances into the school-room, with only one into the entry. A portion of the entry is used for wood, which being thrown against the plastering, lays bare the lathing, making the building, while yet new, bear the tokens of age. In a few instances only have two outside doors been observed, giving separate entrances to boys and girls.

In most instances where the building is not erected on the line of the highway, it is placed only so far back as to allow a straggling wood pile just outside the traveled path. An instance is not now remembered where the generosity of the district has given a play-ground to the school, aside from the *public common* or the *traveled highway*.

The internal arrangements of the new houses are, in many instances, exactly like those of their immediate predecessors, save that in all cases it is believed the old movable slab benches, are superseded by perma-



nent benches with backs. The windows, in all cases perhaps, in the new houses, have made a sensible step *downward* toward the floor; and the desks and seats of the larger scholars, have also been brought down from their inconvenient and dizzy heights, that their occupants may not be "while in, above the world."

Where change has been wrought in the fixtures of the room, the desks are almost always clumsy, occupying unnecessary portions of the room, and rendering them inconvenient for the evolutions of the school.

Ventilation has received a passing thought in the erection of most of the new houses, yet its importance is not probably fully appreciated, nor the best methods of securing it clearly understood. Some ventilate from the windows so successfully, as to part with the warm air almost entirely, and at the same time to retain the offensive gases and odors of the room. Some ventilators are placed in the ceiling in the corners of the rooms, others are placed immediately over the stove pipe,—some are movable, and moved with a cord,—others are simply a scuttle, expected to rise by the expansive power of the gases, as safety valves of engines operate by accumulation of steam.

The substitution of stoves (mainly box stoves,) for the engulfing fire place, as a means of warming school-rooms, is noticed in the new houses.

OF SCHOOL-HOUSES GENERALLY.—To ascertain if improvement has been effected in this class of structures in the state, we must resort to one or two devices of the astronomer, in observing the motions of the heavenly bodies, viz., to notice their respective positions at different and remote periods of time. The progress of improvement has been so slow, (if improvement has been made in school-houses,) that an observer from year to year only, might be at a loss to know that such was the fact; but a comparison of the structures fifteen or twenty years ago, with the buildings now occupied for schools, will doubtless enable one to say that *progress has been made*. It is stated on very creditable authority that in some societies and some towns, *one*, and in some instances, more than one house has been built, and one or more has been *painted*.

The contributions upon old hats, upon writing books that are "writ through," &c., &c., are levied less frequently than formerly to repel the winds at the windows; fewer clapboards are now seen swinging gaily by a single nail, than in bye-gone days; the asthmatic wheezing of the winds through the uncounted apertures is hushed, and the pupils enjoy an irrigation through the roof less frequently than formerly. Curtains are occasionally found to protect the eyes of the pupils from the blinding rays of the sun; the comfort of the smaller children is materially increased by the addition of backs to their hard seats; the desks and seats of the larger pupils have descended toward the floor; the use of stoves giving a comfortable temperature to the rooms, instead of the former equatorial heat and the polar cold; in rare instances the ingenious designs in chalk and charcoal upon the walls and ceiling have retired behind a coating of whitewash, and the yawning fire-place has been plastered over. All these movements distinctly indicate that vitality at least exists among the people of this commonwealth, and that *the best good of their children, as they tell us, lies nearest their hearts*.

It is earnestly hoped that all persons will be open to conviction and receive the above statement of facts as a perfect demonstration of the earnestness of the community for the well being of the schools.

When we come to the *et ceteras* of the school-rooms, such as shovels and tongs, brooms, brushes, bells, globes, sinks, wash-basins; towels, pegs, hooks and shelves for hats, clothing, &c., it is feared such great, such momentous changes, such rapid advances, will not appear to have been made; probably not three districts in the county have gone so fast, or so



far in advance of the others as to have procured all these articles; probably not more than half a dozen districts have supposed it important, that even a mat and scraper are necessary for pupils to use after walking, perhaps a mile in the mud; yet we should be doing them injustice in not supposing that they really feel this quenchless interest, which they represent themselves as possessing for their children, and should greatly misjudge them if we supposed them not doing all in their power to encourage their children in obtaining useful knowledge, and in cultivating the minor virtues while in school.

**OUT-BUILDINGS.**—An appalling chapter might be written, on the evils, the almost inevitable results of neglecting to provide these indispensable appendages to school-houses in our state. Who can duly estimate the final consequences of the first shock given to female delicacy, from the necessary exposure, to which the girls in the public schools are inevitably subjected; and what must be the legitimate results of these frequent exposures during the school-going years of youth? What quenchless fires of passion have been kindled within the bosom of the young of both sexes by these exposures, fires that have raged to the consuming of personal happiness, to the prevention of scholastic improvement, and to the destruction of personal character? again, what *disgust* has been created in both sexes by the results of not having the appropriate retirements which nature imperiously demands? and finally, may not the disinclination, the aversion of large numbers of families, of mothers especially, to sending their daughters to the public schools, have been created by the sufferings they themselves have endured, from the above cause; and an unwillingness to subject the delicacy of their daughters to the obnoxious trial? Were the question not so peculiar as almost to defy examination, it is apprehended this would be found to be the truth. Will it not seem incredible, even to Connecticut men, to be informed that less than one-half of the school-houses in this commonwealth are without these necessary buildings? yet such is probably the fact; thus dooming thousands of girls to bear a loathsome burden of mortification, which they cannot remove without withdrawing from the schools. I have no *exact* data for the above estimate, yet it is probably not far below the truth, if indeed it is at all. So filthy are *most* of those that are provided, that they are not only quite useless, but disgusting in the extreme. In one society of nine schools but one out-house was provided, and that, I was informed, could only be reached in *dry* weather, such was its *location*; nor could it be used even then, such was its *condition*. This state of things, it would seem, should be utterly changed, and that speedily."

### MASSACHUSETTS.

**EXTRACTS** from the "Report of the Secretary (Hon. Horace Mann) of the Board of Education for 1846."

"For years the condition of this class of edifices, throughout the State, taken as a whole, had been growing worse and worse. Time and decay were always doing their work, while only here and there, with wide spaces between, was any notice taken of their silent ravages; and, in still fewer instances, were these ravages repaired. Hence, notwithstanding the improved condition of all other classes of buildings, general dilapidation was the fate of these. Industry and the increasing pecuniary ability which it creates, had given comfort, neatness, and even elegance to private dwellings. Public spirit had erected commodious and costly churches. Counties, though largely taxed, had yet uncomplainingly paid for handsome and spacious court-houses and public offices.

In 1837, not one third part of the Public School-houses in Massachusetts would have been considered tenantable by any decent family, out of the poor-house, or in it. As an incentive to neatness and decency, children were sent to a house whose walls and floors were indeed painted, but they were painted, all too thickly, by smoke and filth; whose benches and doors were covered with carved work, but they were the gross and obscene carvings of impure hands; whose vestibule, after the oriental fashion, was converted into a veranda, but the metamorphosis which changed its architectural style, consisted in laying it bare of its outer covering. The modesty and chastity of the sexes, at their tenderest age, was to be cultivated and cherished, in places, which oftentimes were as destitute of all suitable accommodations, as a camp or a caravan. The brain was to be worked amid gases that stupefied it. The virtues of generosity and forbearance were to be acquired where sharp discomfort and pain tempted each one to seize more than his own share of relief, and thus to strengthen every selfish propensity.

At the time referred to, the school-houses in Massachusetts were an opprobrium to the State; and if there be any one who thinks this expression too strong, he may satisfy himself of its correctness by inspecting some of the few specimens of them which still remain.

The earliest effort at reform was directed towards this class of buildings. By presenting the idea of taxation, this measure encountered the opposition of one of the strongest passions of the age. Not only the sordid and avaricious, but even those, whose virtue of frugality, by the force of habit, had been imperceptibly sliding into the vice of parsimony, felt the alarm. Men of fortune, without children, and men who had reared a family of children, and borne the expenses of their education, fancied they saw something of injustice in being called to pay for the education of others; and too often their fancies started up into spectres of all imaginable oppression and wrong. The school districts were the scene where the contending parties arrayed themselves against each other; the school-house itself their arena. From time immemorial, it had been the custom to hold school district meetings in the school-house. Hither, according to ancient usage, the voters were summoned to come. In this forum, the question was to be decided, whether a new edifice should be erected, or whether the ability of the old one to stand upon its foundations for another season, should be tried. Regard for the health, the decent manners, the intellectual progress and the moral welfare of the children, common humanity, policy, duty, the highest worldly interests of the race, were marshalled on one side, demanding a change; selfishness, cupidity, insensibility to the wants and the welfare of others, and that fallacious plea, that because the school-house had answered the purpose so long, therefore it would continue to answer it still longer,—an argument which would make all houses, and roads, and garments, and every thing made by human hands, last forever,—resisted the change. The disgraceful contrast between the school-house and all other edifices, whether public or private, in its vicinity; the immense physical and spiritual sacrifices which its condition inflicted upon the rising generation, were often and unavailingly urged; but there was always one argument which the advocates for reform could use with irresistible effect,—the school-house itself. Cold winds, whistling through crannies and chinks and broken windows, told with merciless effect upon the opponents. The ardor of opposition was cooled by snow-blasts rushing up through the floor. Pain-imparting seats made it impossible for the objectors to listen patiently even to arguments on their own side; and it was obvious that the tears they shed were less attributable to any wrongs which they feared, than to the volumes of smoke which belched out with every gust of wind from

broken funnels and chimneys. Such was the case in some houses. In others, opposite evils prevailed; and the heat and stifling air and nauseating effluvia were such as a grown man has hardly been compelled to live in, since the time of Jonah.

Though insensible to arguments addressed to reason and conscience, yet the senses and muscles and nerves of this class of men were less harried than their hearts; and the colds and cramps, the exhaustion and debility, which they carried home, worked mightily for their conversion to truth. Under such circumstances, persuasion became compulsory.

Could the leaders of the opposition have transferred the debate to some commodious public hall, or to their own spacious and elegant mansions they might have bid defiance to humanity and remained masters of the field. But the party of reform held them relentlessly to the battle-ground; and there the cause of progress triumphed, on the very spot where it had been so long dishonored.

During the five years immediately succeeding the report made by the Board of Education to the Legislature, on the subject of school-houses, the sums expended for the erection or repair of this class of buildings fell but little short of *seven hundred thousand dollars*. Since that time, from the best information obtained, I suppose the sum expended on this one item to be about *one hundred and fifty thousand dollars annually*. Every year adds some new improvement to the construction and arrangement of these edifices.

In regard to this great change in school-houses,—it would hardly be too much to call it a *revolution*,—the school committees have done an excellent work,—or rather, they have begun it;—it is not yet done. Their annual reports, read in open town meeting, or printed and circulated among the inhabitants, afterwards embodied in the Abstracts and distributed to all the members of the government, to all towns and school committees have enlightened and convinced a State.

Notwithstanding the great *revolution* actually wrought in the condition of school-houses in certain villages and cities of Massachusetts, the following picture of these buildings in the rural towns is drawn by Mr. Leach, one of the agents of the Board of Education, in 1853:

Since the commencement of my agency, I have examined more than one thousand school-houses, and have noticed the following defects in their location and construction. I have found very many school-houses situated in the highways, but a few feet from the traveled road, and without any yard for the scholars to play in. Some I have found in wet and marshy places, which were often surrounded by standing water. Some were quite near ponds or streams, which was the cause of very great annoyance, both in summer and winter. Some were near stores and public places of resort, which were frequently visited during the intermission. Some were near workshops, or manufactories, or railroads, or depots, exposing the children to interruption and accidents. Some were on eminences, surrounded by dangerous declivities. Not one in fifty have I found with suitable backyards, well-fenced, and with decent water closets. But very few have two entrances, one for each sex. In consequence of this arrangement, teachers are compelled to sacrifice thirty minutes each day, one-twelfth of the whole school time, or commit the gross impropriety of sending out boys and girls into the same yard at the same time. Very few houses are constructed with any regard to external beauty or internal convenience. Many are quite too small, not affording, in some instances, more than forty or fifty cubic feet to each pupil, instead of one hundred and fifty, which is regarded as the minimum. Very many are not more than eight feet in height, instead of eleven or twelve feet. A very common and serious defect is the want of good blackboards, placed at the proper height. In very many cases, instead of a blackboard in the rear of the teacher's desk, there is a window to admit light directly in the face of the pupils. In many houses of recent construction there are no blackboards, except in the rear of the pupils, so

that they were obliged to stand or sit on the top of the desks to witness any illustration from the teacher. Where such arrangements existed, I found that but very little use was made of the blackboard by the teacher. Very many schools I have found badly lighted, some admitting too much light, and others too little, and quite often the light was admitted directly in the faces of the pupils. In consequence of too little light, the pupils become short-sighted, and contract a stooping posture by bringing the head near the book. The cases are quite numerous where pupils have become short-sighted and round-shouldered, by being compelled to study in an improper posture. By an excess of light, the sight of pupils has been very much impaired, and, in some cases, entirely lost.

In a large majority of cases, the stairs leading to the upper rooms have been badly constructed, endangering the lives and limbs of pupils. Very many cases of serious injury I have found, which have resulted from this cause. But very few houses are furnished with large closets, or book-cases, to preserve maps, globes, and books of reference. But few are provided with a well, pump, and sink, a very necessary appendage to every good school. In but few instances have there been any attempts to beautify the grounds, by setting out trees, shrubbery, &c. Globes, clocks, thermometers, mats and scrapers, have not been introduced extensively into the country schools. In school districts in the country, when the pupils live some distance from the school, there is seldom any provision for the pupils who wish to stop at noon, or who come in the morning before the time of commencing the school. Many houses have been built, and some recently, with large rooms, containing from one hundred to two hundred pupils each. I have made it a particular point of inquiry to ascertain the advantages and disadvantages of large rooms, as compared with small ones. I have consulted more than one hundred experienced teachers on this subject, and have found but four or five who do not much prefer small rooms to large ones.

In all my examination, I have found but few houses well ventilated. In a large majority of cases, there are no means of ventilating but by opening the windows and doors. And where attempts have been made, it has been but imperfectly accomplished. The ventilating tubes have almost invariably been too small.

## NEW-YORK.

EXTRACT from the "Annual Report of the Superintendent (Hon. Samuel Young) of Common Schools, made to the Legislature, January 13, 1844."

"The whole number of school-houses visited and inspected by the county superintendents during the year was 9,368: of which 7,685 were of framed wood; 446 of brick; 523 of stone, and 707 of logs. Of these, 3,160 were found in good repair; 2,870 in ordinary and comfortable repair, and 3,319 in bad repair, or totally unfit for school purposes. The number furnished with more than one room was 544, leaving 8,795 with one room only. The number furnished with suitable play-grounds is 1,541; the number not so furnished, 7,313. The number furnished with a single privy is, 1,810; those with privies containing separate apartments for male and female pupils, 1,012; while the number of those not furnished with any privy whatever, is 6,423. The number suitably furnished with convenient seats, desks, &c., is reported at 3,282; and the number not so furnished, at 5,972. The number furnished with proper facilities for ventilation is stated at 1,518; while the number not provided with these essential requisites of health and comfort is 7,889.

No subject connected with the interests of elementary instruction affords a source of such mortifying and humiliating reflections as that of the condition of a large portion of the school-houses, as presented in the above enumeration. One-third only of the whole number visited, were found in good repair; another third in ordinary and comfortable condition

only in this respect—in other words, barely sufficient for the convenience and accommodation of the teachers and pupils; while the remainder, consisting of 3,319, were to all intents and purposes unfit for the reception of man or beast.

But 544 out of 9,368 houses visited, contained more than one room; 7,313 were destitute of any suitable play-ground; nearly six thousand were unfurnished with convenient seats and desks; nearly eight thousand destitute of the proper facilities for ventilation; and upwards of six thousand without a privy of any sort; while of the remainder but about one thousand were provided with privies containing different apartments for male and female pupils! And it is in these miserable abodes of accumulated dirt and filth, deprived of wholesome air, or exposed without adequate protection to the assaults of the elements, with no facilities for necessary exercise or relaxation, no convenience for prosecuting their studies; crowded together on benches not admitting of a moment's rest in any position, and debarred the possibility of yielding to the ordinary calls of nature without violent inroads upon modesty and shame; that upwards of two hundred thousand children, scattered over various parts of the State, are compelled to spend an average period of eight months during each year of their pupilage! Here the first lessons of human life, the incipient principles of morality, and the rules of social intercourse are to be impressed upon the plastic mind. The boy is here to receive the model of his permanent character, and to imbibe the elements of his future career; and here the instinctive delicacy of the young female, one of the characteristic ornaments of the sex, is to be expanded into maturity by precept and example! Is it strange, under such circumstances, that an early and invincible repugnance to the acquisition of knowledge is imbibed by the youthful mind; that the school-house is regarded with unconcealed aversion and disgust, and that parents who have any desire to preserve the health and the morals of their children, exclude them from the district school, and provide instruction for them elsewhere?

If legislation could reach and remedy the evil, the law-making power would be earnestly invoked. But where the ordinary mandates of humanity, and the laws of parental feeling written by the finger of heaven on the human heart, are obliterated or powerless, all statutory provisions would be idle and vain. In some instances during the past year, comfortable school-houses have been erected to supply the place of miserable and dilapidated tenements which for years had been a disgrace to the inhabitants. Perhaps the contagion of such worthy examples may spread; and that which seems to have been beyond the influence of the ordinary impulses of humanity, may be accomplished by the power of example or the dread of shame.

The expense of constructing and maintaining convenient buildings, and all other proper appliances for the education of the young, is a mere trifle when contrasted with the beneficial results which inevitably follow.

Of all the expenditures which are calculated to subserve the wants or gratify the caprices of man, there are none which confer such important and durable blessings as those which are applied to the cultivation and expansion of the moral and intellectual powers. It is by such cultivation that human happiness is graduated, and that from the most debased of the savage tribes, nation rises above nation in the scale of prosperity and civilization. The penuriousness which has been manifested on this subject, and the reckless profligacy exhibited on others, is strongly characteristic of the past. In future times, when the light of science shall be more widely diffused, and when the education of the young shall claim and receive the consideration it deserves, a retrospection to the records of the past will exhibit preceding generations in no enviable point of view.

The following remarks and extracts from the Reports of the special visitors appointed by the State Superintendent (Hon. John C. Spencer) in each of the counties, for 1840, and for 1841, are taken from Part I of that admirable work, the "School and the Schoolmaster," Part I, by Prof. (now Bishop) Potter, and Part II, by George B. Emerson, Esq., of Boston.

"I ask, then, *first*, are our common schools places of agreeable resort, calculated to promote health, and to connect pleasant associations with study?

*Ans.* Say the visitors, in one of the oldest and most affluent towns of the south-eastern section of the state, 'It may be remarked, generally, that the school-houses are built in the old style, are too small to be convenient, and, with one exception, too near the public roads, generally having no other play-ground? Twelve districts were visited in this town.—See *Report of Visitors* (1840), p. 47.

Say the visitors of another large and wealthy town in the central part of the state, 'Out of the 20 schools they visited, 10 of the school-houses were in bad repair, and many of them not worth repairing. In none were any means provided for the ventilation of the room. In many of the districts, the school-rooms are too small for the number of scholars. The location of the school-houses is generally pleasant. There are, however, but few instances where play-grounds are attached, and their condition as to privies is very bad. The arrangement of seats and desks is generally very bad, and inconvenient to both scholars and teachers. Most of them are without backs.'—P. 28 (*Rep.*, 1840.)

From another town in the north-western part of the state, containing a large population, and twenty-two school districts, the visitors report of district No. 1, that the school-house is large and commodious, but scandalously cut and marked; the school-room but tolerably clean; the privies very filthy, and no means of ventilation but by opening the door or raising the window. No. 2 has an old school-house; the room not clean; seats and desks well arranged, but cut and marked; no ventilation; the children healthy, but not clean. No. 3 has an old frame building, but warm and comfortable. No. 4 has a very poor, dilapidated old frame school-house, though the inhabitants are generally wealthy for that country. No. 5 has a frame school-house, old and in bad condition; school-room not clean; seats and desks not convenient; No. 6 has a frame school-house, old and in bad condition; the school-room is not clean; no cup or pail for drinking water. No. 7 has a log school-house, in a very bad condition; desks and seats are inconvenient. 'Here, too,' say the visitors, 'society is good, and people mostly in easy circumstances, but the school-house very unbecoming such inhabitants. It does not compare well with their dwellings.' No. 8, say the visitors, is 'a hard case.' No. 9 has a frame house in good condition and in a pleasant location, but is 'too small for the number of children.' No. 10 has a log school-house. No. 11 has a 'log shanty for a school-house, not fit for any school.' No. 12 a log house. No. 13 has a log shanty, in bad condition, not pleasantly located, school-room not clean. 'The school-house or *hotel* in this district is so cold in winter, so small and inconvenient, that little can be done towards preserving order or advancing education among so many scholars; some poor inhabitants and some in good circumstances; might have a better school-house.' No. 14 has a good frame house, in good condition, pleasant location, with ample and beautiful play-ground; school-room in clean condition. The visitors add, 'In this district the inhabitants are



poor, and the scholars attend irregularly; *the house was built by one man in low circumstances, who has a large family of boys to educate; a noble act.* No. 15 has a frame house, in a good, warm, and comfortable condition, with a pleasant and retired location and a play-ground. No. 16 has a log shanty for a school-house. No. 17, 'no regular school-house other than some old log house.' No. 18, no school-house. No. 19, a log shanty. No. 20 and 21 are new districts. No. 22 has a frame school-house, in good repair and pleasantly situated. Thus, out of twenty-two school-houses, not more than five are reported as respectable or comfortable; none have any proper means of ventilation; eight are built of logs; and but one of them, according to the visitors, has a privy.—*Report (1840), p. 142.*

It is also a subject of frequent complaint in these reports, that the seats are too high (too high, say the visitors in one case, for a man of six feet, and all alike), and are, therefore, uncomfortable for the children, as well as productive of much disorder. 'We have found,' says the report from one town, 'except in one school, all the seats and desks much too high, and in that one they were recently cut down at our recommendation. In many of our schools, a considerable number of children are crowded into the same seat, and commonly those seated beyond the entering place have no means of getting at their seats but by climbing over those already seated, and to the ruin of all regard to cleanliness.'

'We have witnessed much uneasiness, if not suffering, among the children, from the dangling of their legs from a high seat, and, with the one exception, have seen them attempting to write on desks so high that, instead of the elbow resting to assist the hand in guiding the pen, the whole arm has, of necessity, been stretched out; for, if they did not this, they must write rather by guess than sight, unless some one may have the fortune to be near-sighted, and, from this defect, succeed in seeing his work. This is a great evil, and ought to be remedied before we complain of the incompetency of teachers.'—*Report (1841), p. 38.*

These specimens will serve to show how far many of the school-houses, in this state, are pleasant places of resort, or study, and in what degree they are likely to inspire a respect for education, or a desire to enjoy and improve its advantages. The condition and aspect of the building, with its appendages and surrounding landscape, are inseparably associated, in a child's mind, with his first day at school, and his first thoughts about education. Is it well, then, that these earliest, most lasting, and most controlling associations, should be charged with so much that is offensive? Is it to be expected, that the youthful mind can regard that as the cause, next to religion, most important of all others, which is upheld and promoted, in such buildings, as the district school-house usually is? Among the most comfortless and wretched tenements, which the pupil ever enters, he thinks of it with repugnance; the tasks which it imposes, he dreads; and he at length takes his leave of it, as of a prison, from which he is but too happy to escape.

This seems to me to be the greatest evil connected with our school-houses. But their deleterious effect on health, is also to be considered. Air which has been once respired by the lungs, parts with its healthy properties, and is no longer fit for use. Hence a number of persons, breathing the air of the same apartment, soon contaminate it, unless the space is very large, or unless there is some provision for the introduction of fresh, as well as the exclusion of foul air. This ventilation is especially important for school-houses, since they are usually small in proportion to the number of scholars; the scholars remain together a long while at once, and are less cleanly in their personal habits than adults. Yet important as it is, probably not one common school in fifty, in this state



will be found supplied with adequate means to effect it. The cracks and crevices, which abound in our school-houses, admit quite enough of cold air in winter, but not enough of fresh. What is wanted at that season, for both health and economy, is a constant supply of fresh warm air; and this is easily obtained by causing the air, as it enters from without, to pass through heated flues, or over heated surfaces.

It is also important, to the health of scholars and teachers in common schools, that the rooms should be larger and have higher ceilings; and that much more scrupulous attention should be paid to the cleanliness of both the room and its inmates. 'An evil,' say the visitors of one of the towns, 'greater than the variety of school-books or the want of necessary apparatus, is having school-rooms so unskillfully made and arranged. Of our 13 school-rooms, only 3 are ten feet high, and of the residue only one is over eight feet. The stupidity arising from foul, oft-breathed air, is set down as a grave charge against the capacity of the scholars or the energy of the teacher. A room for 30 children, allowing 12 square feet for each child, is low at 10 feet, and for every additional ten children an extra foot in elevation is absolutely necessary, to enable the occupants of the room to breathe freely.'—*Report* (1841), p. 38.

Are common schools so conducted, as to *promote habits of neatness and order, and cultivate good manners and refined feelings?*

From the quotations already made from the reports of visitors, it appears that the school-rooms, in many cases, were not clean; and the same thing is often alleged of the children. I will add but one other passage, to which I happen to open on p. 39 of the *Report* (1840). It relates to a town containing 24 school districts, of which 16 were visited. Of these 16, one quarter are represented to have been almost entirely regardless of neatness and order, viz.: No. 4 'has a dirty school-room, and the appearance of the children was dirty and sickly.' No. 2 'has a dirty school-room, inconveniently arranged, and *ventilated all over*;' the children 'rather dirty,' and no means of supplying fresh water except from the neighbor's pails and cups. No. 3 has 'an extremely dirty school-room, without ventilation, the children not clean, and no convenience for water.' No. 24 'has a school-house out of repair, dirty, and inconvenient in its arrangements.'

It is also a subject of almost universal complaint, that the *school-houses are without privies*. On an average, probably not more than one in twenty, of the school-houses throughout the state, has this appendage; and in these, it was almost invariably found, by the visitors, to be in a bad state. This fact speaks volumes, of the attention, which is paid at these schools, to delicacy of manners, and refinement of feeling. None but the very poorest families think of living without such a convenience at home; and a man, who should build a good dwelling-house, but provide no place for retirement when performing the most private offices of nature, would be thought to give the clearest evidence of a coarse and brutal mind. Yet respectable parents allow their children to go to a school where this is the case; and where the evil is greatly aggravated by the fact, that numbers of both sexes are collected, and that, too, at an age of extreme levity, and when the youthful mind is prone to the indulgence of a prurient imagination. Says one of the visitors (*Report*, 1840, p. 77), 'In most cases in this town, the scholars, male and female, are turned promiscuously and simultaneously into the public highway, without the shelter of so much (in the old districts) as a 'stump' for a covert to the calls of nature. The baneful tendency, on the young and pliant sensibilities, of this barbarous custom are truly lamentable.' So the visitors of one of the largest and oldest counties: 'We regret to perceive that many of the districts have neglected to erect privies for the use of the children at

school. This is a lamentable error. The injury to the taste and morals of the children which will naturally result from this neglect, is of a character much more serious than the discomfort which is obviously produced by it.—(*Report, 1840, p. 131.*)"

### VERMONT.

EXTRACT from the "*First Annual Report of the State Superintendent (Hon. Horace Eaton,) of Common Schools, October, 1846,*" made to the Legislature.

"It might occur to any one in travelling through the State, that our school-houses are almost uniformly located in an uninteresting and unsuitable spot, and that the buildings themselves too generally exhibit an unfavorable, and even repulsive aspect. Yet by giving some license to the imagination it might be supposed that, notwithstanding their location and external aspect were so forbidding, the internal appearance would be more cheerful and pleasant—or at least, that the arrangement and construction within would be comfortably adapted to the purposes which the school-house was intended to fulfil. But an actual inspection of by far the greatest number of the school-houses in the State, by County Superintendents, discloses the unpleasant fact, that ordinarily the interior does but correspond with the exterior, or is, if possible, still worse. A very large proportion of these buildings throughout the State must be set down as in a miserable condition. The melancholy fact is established by the concurrent report of all our County Superintendents, that in every quarter of the State they are, as a class, altogether unsuited to their high purposes. Probably nine-tenths of them are located upon the line of the highway; and as the geographical centre of the district usually determines their situation, aside from the relation with the road, it is a rare chance that one is not placed in an exposed, unpleasant and uncomfortable spot. In some cases—especially in villages—their location seems to be determined by the worth, or rather by the worthlessness of the ground on which they stand—that being selected which is of the least value for any other purpose. Seldom or never do we see our school-houses surrounded by trees or shrubbery, to serve the purpose which they might serve so well—that of delighting the eye, gratifying the taste, and contributing to the physical comfort, by shielding from the scorching sun of summer, and breaking the bleak winds of winter. And from buildings thus situated and thus exposed, pupils are turned out into the streets for their sports, and for other purposes still more indispensable. What better results could be expected under such a system than that our 'girls should become hoydens and our boys blackguards?' Indeed it would be a happy event, if in no case results still more melancholy and disastrous than this were realized.

But this notice of *ordinary* deficiencies does not cover the whole ground of error in regard to the situation of school-houses. In some cases they are brought into close connection with positive nuisances. In a case which has fallen under the Superintendent's own personal observation, one side of the school-house forms part of the fence of a hog-yard, into which, during the summer, the calves from an extensive dairy establishment have been thrown from time to time, (disgusting and revolting spectacle!) to be rent and devoured before the eyes of teacher and pupils—except such portions of the mutilated and mangled carcasses as were left by the animals to go to decay, as they lay exposed to the sun and storm. It is true the windows on the side of the building adjoining the yard, were generally observed to be closed, in order to shut out the

almost insupportable stench which arose from the decomposing remains. But this closure of windows could, in no great degree, 'abate the nuisance;' for not a breath of air could enter the house from any direction but it must come saturated with the disgusting and sickening odor that loaded the atmosphere around. It needs no professional learning to tell the deleterious influence upon health, which must be exerted by such an agency, operating for continuous hours.

Such cases, it is hoped and believed, are exceedingly rare. But it is much to be feared that the usual exemption enjoyed by teachers and pupils, from even such outrages upon their senses and sensibilities, as have been detailed, is to be attributed to the fact that such arrangements are not ordinarily convenient, rather than to any prevailing conviction of their impropriety, or any general and settled purpose to avoid them. The case is named as at least strong evidence that the pertinency of considerations, involving a regard either to taste, comfort, or even health itself, is generally overlooked or disregarded, in fixing upon a site for a school-house. At all events these purposes are all *exposed* to be violated under the prevailing neglect of districts to secure the possession of sufficient ground for a yard around the school-house. But it would seem unnecessary to urge, beyond the bare suggestion, the importance of providing for school-houses, a comfortable location, a sufficient yard and play-ground, a wood-house and other out-buildings, a convenient access to water, and the surrounding of the premises with shade-trees which might serve for shelter, as well as delight the eye, and aid to render the school-house—what it should be—one of the most attracting and delightful places of resort upon the face of the earth. It should be such, that when the child shall have changed into the gray-haired man, and his memory wanders back through the long vista of vanished years, seeking for some object on which it may repose, this shall be the spot where it shall love to rest.

In the construction of the school-house—embracing its material, style of architecture, and finish—as little care and taste are exhibited, as might be expected from the indifference manifested in regard to its location and surrounding circumstances. Cheapness of construction seems, in most cases, to be the great governing principle, which decides upon its materials, its form, and all its internal arrangements. No complaint on this score could justly be made, if the general condition of these buildings were clearly and fairly attributed to want of ability. But while our other edifices, both public and private, have improved in elegance, convenience, and taste, with the increasing wealth of our citizens, our school-houses linger in the rear and bear the impress of a former age. In this respect,

'That which in days of yore we were  
We at the present moment are.'

Low walls might be instanced as *one* of the prevailing defects in school-house architecture. The quantity of air contained in a school-room of the usual height, is so small as to be soon exhausted of its oxygen; and the dullness, headache and depression which succeed to this result, are but too well known and too often felt, although they may fail of being attributed to their true cause. And why should our children be robbed of a comfortable supply of that pure and wholesome air, with which our Creator, in the largeness and richness of his bounty, has surrounded the earth and filled the sky? But if the condition of the house is such, as in part to prevent the injurious effects arising from a deficiency of pure air, by means of broken windows and gaping crevices—then colds, coughs and as the ultimate and crowning result—consumption—

(and of this disease, what thousands of cases have had their foundations laid in the school-house!) must be the consequence of this sort of exposure. This is true in regard to *all* classes and conditions of pupils. But it should be distinctly kept in mind, although it is ordinarily overlooked and forgotten, that children accustomed to be comfortably protected against cold or vicissitudes of temperature, at home, will inevitably suffer the more when exposed to them in the school-house. And here is an additional reason why these structures should be improved, as our dwelling houses are generally becoming more comfortable.

But there is not room here for details—not even to exhibit *this* topic in all its important bearings. And it has been thus hinted at only to prove that the general charge of faulty construction is not wholly unfounded.

It was the purpose of the Superintendent to discuss at some length, the pernicious influence exerted, both upon the health of pupils, and their progress in learning, by the miserable structures in which the State abounds, but the extent of the remarks already made precludes it.

One cause of the prevailing fault in regard to the construction and internal arrangement of school-houses, doubtless, is the want of proper models. Districts, when about erecting a school-house, cannot well do more than follow the examples before them. To form the plan of a proper school-house—one well adapted to all the various ends which should be sought, such as the convenience, comfort, and health of pupils, convenience for supervision and conduct of the school, and facilities for the most successful prosecution of study—would require such an extent of observation and so full an acquaintance with the laws of health, of mind and morals—and then such a skill in designing a structure in which all the necessary conditions should be observed and secured, that it would be unreasonable to expect that a district could command them, without an opportunity to avail itself of the experience and observation of others. And districts have almost universally felt this lack of guidance. But it is believed that hereafter, information on the subject of school-house architecture, will be more accessible; and if, as a first step, some one district in every town in the State would avail itself of the necessary information, and make a vigorous effort to secure the erection of a well located, well planned, and well constructed school-house, they would perform an act of high public beneficence, as well as confer upon themselves an inestimable blessing. And shall not one or two years realize the accomplishment of this noble purpose? What district will lead the van?

#### NEW HAMPSHIRE.

EXTRACTS from the "Report of the Commissioner, (Prof. Hordlock, of Dartmouth College) of Common Schools, to the Legislature of New Hampshire, June Session, 1847."

"The success of our whole system depends as much on a thorough reform in the construction and care of school-houses as upon any other single circumstance whatever.

It is wonderful, and when their attention is called to it, strikes the inhabitants of the Districts themselves as really unaccountable, that careful and anxious parents have been content to confine their children for so many hours a day through a large part of the severest and most trying seasons of the year, in houses so ill constructed, so badly ventilated, so imperfectly warmed, so dirty, so instinct with vulgar ideas, and so utterly repugnant to all habits of neatness, thought, taste, or purity. There are multitudes of houses in the State, not only inconveniently located, and awkwardly planned, but absolutely dangerous to health and morals.

And it has struck me with the greater surprise, that this is true not only of the thinly peopled parts of the State, but of flourishing villages. In one of the largest towns the principal District School was kept, the last winter, in a dilapidated, rickety, uncouth, slovenly edifice, hardly more comfortable than some barns within sight of it. In one enterprising village the school-house, as I looked at it from a little distance, appeared decidedly the shabbiest and most neglected building, not to say dwelling, within reach of my eye. I have been in houses, which no scrubbing could keep clean; they were never made to be clean: and this, in places, where private taste is adorning the town with the ornaments of architecture and enriching the country with the fruits of rural industry.

It is, however, encouraging to find, that a better feeling is coming to prevail on this subject. Many districts are rebuilding, and, in most instances, upon an improved plan. Some examples have been set of good judgment and liberal expenditure for this important object. And it is hoped, that other districts will be stimulated to imitate them.

Whenever a new house is to be erected, it should first be carefully located, so as best to accommodate the whole district, and by all means, on an open, healthy, agreeable site, with ample room about it on all sides and out of the way of floods of water or of dust.

## MAINE.

### EXTRACT from a special "Report of the Secretary of the Board of Education, upon the subject of School-Houses."

"It is worthy of note, and of most serious consideration, that a majority of the returns speak of ill-constructed school-houses as one of the most prominent 'defects in the practical operation of the law establishing common-schools.' The strength and uniformity of the language made use of, as well as the numerous applications to the members of the board, and their secretary, for information upon this subject, leave no room for doubt as to the existence of a wide-spread evil; an evil, the deleterious influence of which, unless it is reformed, and that speedily, is not to be confined to the present generation, but must be entailed upon posterity. In remarking upon this subject, as long ago as 1832, it was said by the board of censors of the American Institute of Instruction, that 'if we were called upon to name the most prominent defect in the schools of our country; that which contributes most, directly and indirectly, to retard the progress of public education, and which most loudly calls for a prompt and thorough reform, it would be the want of spacious and convenient school-houses.' From every indication, there is reason to believe that the remark is applicable to our school-houses, in their present condition, as it was when made. For the purpose of contributing, in some small degree, towards effecting a reform for which so urgent a necessity exists, and rendering some assistance, in the way of counsel, to those who are about erecting new school-houses, or remodelling old ones, this report is prepared, under the direction of the board. It makes no claim to originality of thought or language; it is, in fact, a mere compilation of the thoughts and language of others who have given the subject a careful investigation, whose opinions are the result of close observation and long experience, and are therefore entitled to our confidence and respect. To save the necessity of giving credit, upon almost every page of this report for borrowed language, as well as ideas, it may here be remarked, that the principal sources from which the information herewith communicated has been compiled, are, the reports upon the subject of school-houses, by Hon. Horace Mann and Henry Barnard, Esq., and 'The School-master,' by Mr. George B. Emerson; gentlemen to whom, for their efforts in the

cause, a large debt of gratitude is due from the friends of education; a debt which can be discharged in no manner more acceptable to them, than by entering into their labors, and adopting and reducing to practice their very valuable suggestions."

### RHODE ISLAND.

EXTRACTS from "Report on the condition and improvement of the Public Schools of Rhode Island, submitted Nov. 1, 1845, by Henry Barnard, Commissioner of Public Schools."

The condition of the school-houses, was, in my circuit through the schools, brought early and constantly under my notice, and to effect an immediate and thorough reform, public attention was early and earnestly called to the subject. The many and great evils to the health, manners, morals, and intellectual habits of children, which grow out of their bad and defective construction and appurtenances, were discussed and exposed, and the advantages of more complete and convenient structures pointed out. In compliance with the request of the Committee on Education, a law authorizing school districts to lay and collect a tax to repair the old, and build new school-houses, was drafted and passed; and in pursuance of a resolution of the General Assembly, a document was prepared embodying the results of my observations and reflections on the general principles of school-architecture, and such plans and descriptions of various structures recently erected, for large and small, city and country districts, and for schools of different grades, as would enable any committee to act understandingly, in framing a plan suitable to the wants of any particular district or school. The same document was afterwards abridged and distributed widely, as one of the 'Educational Tracts,' over the state. I have secured the building of at least one school-house in each county, which can be pointed to as a model in all the essential features of location, construction, warming, ventilation, seats and desks, and other internal and external arrangements.

During the past two years, more than fifty school-houses have been erected, or so thoroughly repaired, as to be substantially new—and most of them after plans and directions given in the above document, or furnished directly by myself, on application from districts or committees."

"Of these, (three hundred and twelve school-houses visited,) twenty-nine were owned by towns in their corporate capacity; one hundred and forty-seven by proprietors; and one hundred and forty-five by school districts. Of two hundred and eighty school-houses from which full returns were received, including those in Providence, twenty-five were in very good repair; sixty-two were in ordinary repair; and eighty-six were pronounced totally unfit for school purposes; sixty-five were located in the public highway, and one hundred and eighty directly on the line of the road, without any yard, or out-buildings attached; and but twenty-one had a play-ground inclosed. In over two hundred school-rooms, the average height was less than eight feet, without any opening in the ceiling, or other effectual means for ventilation; the seats and desks were calculated for more than two pupils, arranged on two or three sides of the room, and in most instances, where the results of actual measurement was given, the highest seats were over eighteen inches from the floor, and the lowest, except in twenty-five schools, were over fourteen inches for the youngest pupils, and these seats were unprovided with backs. Two hundred and seventy schools were unfurnished with a clock, black-board, or thermometer, and only five were provided with a scraper and mat for the feet."



"Such was the condition of most of the places where the public schools were kept in the winter of 1843-44, in the counties of Kent, Washington and Newport, and in not a few districts in the counties of Providence and Bristol. In some districts, an apartment in an old shop or dwelling-house was fitted up as a school-room; and in eleven towns, the school-houses, such as they were, were owned by proprietors, to whom in many instances, the districts paid in rent a larger amount than would have been the interest on the cost of a new and commodious school house. Since the passage of the Act of January, 1844, empowering school districts to purchase, repair, build and furnish school-houses, and since public attention was called to the evils and inconvenience of the old structures, and to better plans of construction and internal arrangement, by public addresses, and the circulation of documents, the work of renovation in this department of school improvement has gone on rapidly. If the same progress can be made for three years more, Rhode Island can show, in proportion to the number of school districts; more specimens of good houses, and fewer dilapidated, inconvenient and unhealthy structures of this kind, than any other state. To bring about thus early this great and desirable result, I can suggest nothing beyond the vigorous prosecution of the same measures which have proved so successful during the past two years.

1. The public mind in the backward districts must be aroused to an active sense of the close connection of a good school-house with a good school, by addresses, discussions, conversation and printed documents on the subject, and by the actual results of such houses in neighboring districts and towns.

2. Men of wealth and intelligence in their several neighborhoods, and capitalists, in villages where they have a pecuniary interest, can continue to exert their influence in this department of improvement.

3. School committees of every town can refuse to draw orders in favor of any district which will not provide a healthy and convenient school-room for the children of the district; and to approve plans for the repairs of an old, or the construction of a new house, which are to be paid for by a tax on the property of the district, unless such plans embrace the essential features of a good school-house.

4. The Commissioner of Public Schools must continue to furnish gratuitously, plans and directions for the construction and arrangement of school-houses, and to call the attention of builders and committees to such structures as can be safely designated as models.

Districts should make regulations to preserve the school-house and appendages from injury or defacement, and authorizing the trustees to make all necessary repairs, without the formality of a special vote on the subject."

## MICHIGAN

EXTRACTS from "Annual Report of the Superintendent (Hon. Ira May hew,) of Public Instruction of the State of Michigan, submitted December 10, 1847."

"The place where our country's youth receive their first instruction, and where nineteen twentieths of them complete their scholastic training claims early attention. We may then profitably dwell upon the condition of our common school-houses.

In some instances school-houses are favorably located, being situated on dry, hard ground, in a retired though central part of the district, in the midst of a natural or artificial grove. But they are usually located without reference to taste, or the health and comfort of teacher or children. They are generally on one corner of public roads, and sometimes adju-



cent to a cooper's shop, or between a blacksmith's shop and a saw-mill. They are not unfrequently placed upon an acute angle, where a road forks, and sometimes in turning that angle the travel is chiefly behind the school-house, leaving it on a small triangle, bounded on all sides by public roads.

At other times the school-house is situated on a low and worthless piece of ground, with a sluggish stream of water in its vicinity, which sometimes even passes under the school-house. The comfort and health even of children are thus sacrificed to the parsimony of their parents.

Scholars very generally step from the school-house directly into the highway. Indeed, school-houses are frequently one half in the highway, and the other half in the adjacent field, as though they were unfit for either. This is the case even in some of our principal villages.

School-houses are sometimes situated in the middle of the highway, a portion of the travel being on each side of them. When scholars are engaged in their recreations, they are exposed to bleak winds and the inclemency of the weather one portion of the year, and the scorching rays of the meridian sun another portion. Moreover, their recreations must be conducted in the street, or they trespass upon their neighbors' premises. Such situations can hardly be expected to exert the most favorable influence upon the habits and character of the rising generation.

Although there is a great variety in the dimensions of school-houses, yet there are few less than sixteen by eighteen feet on the ground, and fewer still larger than twenty-four by thirty feet. Exclusive of entry and closets, when they are furnished with these appendages, school-houses are not usually larger than twenty by twenty-four feet on the ground, and seven feet in height. They are, indeed, more frequently smaller than larger. School-houses of these dimensions have a capacity of three thousand three hundred and sixty cubic feet, and are usually occupied by at least forty-five scholars in the winter season. Not unfrequently sixty or seventy, and occasionally more than a hundred scholars occupy a room of this size.

A simple arithmetical computation will abundantly satisfy any person who is acquainted with the composition of the atmosphere, the influence of respiration upon its fitness to sustain animal life, and the quantity of air that enters the lungs at each inspiration, that a school-room of the preceding dimensions does not contain a sufficient quantity of air to sustain the healthy respiration of even *forty-five* scholars, three hours, the usual length of each session; and frequently the school-house is imperfectly ventilated between the sessions at noon, or indeed, for several days in succession.

The ordinary facilities for ventilating school-rooms, are opening a door, or raising the lower sash of the windows. The prevailing practice with reference to their ventilation, is opening and closing the door, as the scholars enter and pass out of the school-house, before school, during the recesses, and at noon. Ventilation, *as such*, I may safely say, has not hitherto been practiced in one school in fifty. It is true, the door has been occasionally set open a few minutes, and the windows have been raised, but the object has been, either to let the *smoke* pass out of the room, or to *cool* it when it has become *too warm*, not to ventilate it. Ventilation, by opening a door or raising the windows, is imperfect, and frequently injurious. A more effectual and safer method of ventilation, is to lower the upper sash of the windows, or, in very cold or stormy weather, to open a ventilator in the ceiling, and allow the vitiated air to escape into the attic. In this case, there should be a free communication between the attic and the outer air, by means of a lattice window, or otherwise. A ventilator may be constructed in connection with the chimney, by carrying up a partition in the middle. One half the chim-

ney, in this case, may be used for a smoke flue, and the other half for a ventilator.

There are few school-houses the internal construction of which is in all respects alike; yet, by far the majority of them will rank in one of the three following classes:

1. The first class embraces those which are constructed with one or two tiers of desks along each side of the house, and across one end of it; the outer seat having the wall of the house for its back, and the front of each tier of desks constituting the back to the next inner seat. There is usually an alley on each side of the house and at the end of it, leaving the seats of sufficient length to accommodate from five to eight scholars. Those sitting next the alleys can pass to and from their seats without discommoding others. All the rest, (usually not less than three-fourths the entire number,) disturb from one to five or six scholars every time they pass to or from their seats; unless, (which is about as commonly practiced, especially with the scholars most distant from the alleys,) they *climb over the desks* in front of them.

Occasionally the desks are shorter, accommodating three or four scholars; and, sometimes, they are intended to accommodate two scholars only, so that each of them, (excepting the outer ones at the end desks,) sits adjacent to an alley, and can pass to and from his seat without disturbing others. There is usually a desk, or table, for the teacher's use, (or at least a *place* for one,) at the end of the house not occupied by the cross seats.

2. The second class embraces those in which the desks extend across the house, with an alley through the middle of it lengthwise, and occasionally one around the outside of the room. All the desks of the second class front the teacher's desk or table.

3. The third class embraces those which are constructed with a row of desks along each side of the house, and across one end of it, the desks fronting the walls of the house, so that the backs of the scholars, while sitting at them, are turned towards the teacher. In this class of houses there are usually three long seats without backs, just within the desks. Sometimes the seats are joined at the corners so as to continue unbroken, twice the length of the house and once its width, a distance of forty-five or fifty feet. There is usually a second tier of seats, and sometimes desks within them, fronting the central part of the room.

There is one impropriety in the construction of a majority of school houses. The desks are generally constructed with close fronts extending to the floor, whereby a free circulation of air, and consequent equilibrium of temperature, are interrupted, which would take place were the seats and desks so arranged as to allow suitable channels of communication. The scholars behind the desks are necessarily troubled with cold feet, unless the room is kept too warm. Were this evil removed, the first class, with short desks, would constitute a very comfortable and convenient arrangement, except from the circumstance that the children are placed opposite each other, which is a serious evil, especially where both sexes are in the same room, as is the case in nearly all of our common schools.

Another objection to long desks, is the inconvenience to which the scholars are subjected in passing to and from their seats. This objection exists to a considerable extent in the second class of houses, especially where there is not an alley around the outside of the room. Were it not for this inconvenience,—which might be obviated by introducing a greater number of alleys and shortening the desks, so as to accommodate but two scholars, each of whom would sit adjacent to an alley, and could pass to and from his seat without disturbing others—the *second* would, in my judgment, constitute the preferable plan. All the scholars should face

the teacher, but none of them should face each other. This is particularly important where both sexes attend the same school.

And what shall I say of the third class?—I can readily enumerate some of its inconveniences, but its real advantages are, in my opinion, few. The following are some of the inconveniences: 1. There is little or no uniformity, usually, in the position of the scholars. Some of them face the walls, others the inner part of the room, and others still sit astride the seat. 2. When the teacher desires the attention of the school, a portion of the scholars must either turn about, or sit with their backs towards him, while he addresses them. 3. In changing their positions in foul weather, the scholars are apt to muddy the seats, and the clothes of those who sit adjacent to them. 4. The change of position is frequently embarrassing to the girls. 5. Front lights are less pleasant, and more injurious to the eyes, than side lights or back ones are. 6. Sitting on a plane seat, without a back, is uncomfortable, and often engenders disease of the spine, especially in childhood and youth.

The principal supposed advantage of this construction is, I believe, that it affords the teacher a better opportunity for detecting the scholars when engaged in mischief. I do not see how any material advantage of this kind can exist, till the bodies of children become transparent.

But were the supposed advantage real, it seems to me to be tempting children to do wrong, to give the teacher an opportunity of displaying his skill in detecting them. When children cannot see their teacher, they frequently think he cannot see them, and conduct accordingly.

There are several inconveniences not yet specified, existing to a less or greater extent, in each of the three classes of houses I have described.

1. The height of the seats, although sometimes adjusted with great care, is frequently determined without any apparent regard to the size and comfort of the scholars who are to occupy them. I have visited many schools in which the majority of the scholars reverse the ordinary practice of *standing up* and *sitting down*. They literally *sit up* and *stand down*, their heads being higher while *sitting* than when *standing*.

2. The desks, with their close fronts, are frequently several inches too high. I have visited many schools in which all that could be seen of a majority of the scholars occupying the back seats, was a *part of their heads*, and that, too, when they sat erect upon their seats. The desks, moreover, are frequently inclined twenty-five or thirty degrees, so that a book laid upon them immediately slides off. An inclination of one inch to the foot will be found more convenient than greater obliquity. A space of three inches on the most distant portion of the desk, should be left horizontal, for inkstands, pencils, pens, etc.

3. The floor is sometimes considerably inclined, for the purpose, I suppose, of giving the teacher a better opportunity of seeing the more distant scholars. The whole school is not only subjected to the inconvenience of walking up and down an inclined plane, but what is much worse, when scholars sit upon their seats, and rest their feet upon the floor, when within reach, they are constantly sliding from under them.

School-houses are not generally furnished with suitable conveniences for disposing of the loose wearing apparel of the scholars, their dinners, etc. There are sometimes a few nails or shelves, in a common entry, through which all the scholars pass, upon which a portion of their clothes may be hung or laid, and where dinners may be deposited. But in such cases, the outside door is usually left open, the rain and snow beat in, and the scholars, in haste to get their own clothes, frequently pull down as many more, which are trampled under foot. Moreover, the dinners are frozen, and not unfrequently they are devoured by dogs, and even by the hogs that run in the street. But the majority of school-houses are not furnished with an entry; and where there is one, frequently not even a

nail can be found in it, upon which a single article of clothing may be hung. Neither are there nails or shelves for this purpose within the school-room. Scholars generally are obliged to throw their clothes across the desks, upon the seats, or into the windows.

School-houses are generally warmed by means of stoves, some of which are in a good condition, and supplied with dry wood from the wood-house. The instances, however, in which such facilities for warming exist, are comparatively few. It is much more common to see cracked and broken stoves, the doors without either hinges or latch, and rusty pipe of various sizes. Green wood, and that which is old and partly decayed, either drenched with rain or covered with snow, is much more frequently used for fuel, than sound, seasoned wood, protected from the weather by a suitable wood-house. With this state of things, it is difficult to kindle a fire, which burns poorly, at best, when kindled. The room is filled with smoke a considerable part of the time, especially in stormy weather. The school is frequently interrupted two or three times a day, to fasten together and tie up the stove pipe. This may seem a little like exaggeration. I know there are many exceptions. But in a majority of instances some of these inconveniences exist, and the most of them are united in more cases than people are aware of. I have heard trustees and patrons who have visited their school with me, for the first time in several years, say, "We ought to have some dry wood to kindle with;" "I didn't know as it was so smoky;" "We must get some new pipe; really our stove is getting dangerous," etc. And some of the boys have relieved the embarrassment of their parents by saying, "It don't smoke near as bad to-day as it does sometimes."

The principal reason why the stoves in our school-houses are so cracked and broken, and why the pipes are so rusty and open, lies in the circumstance that *green wood from the snow bank*, is used for fuel, instead of *dry wood from the wood-house*. There are at least three reasons why this is poor policy.

1. It takes at least double the amount of wood. A considerable portion of the otherwise sensible heat becomes latent in the conversion of ice, snow and moisture into steam.

2. The steam thus generated cracks the stove and rusts the pipe, so that they will not last one half as long as though dry wood from the wood-house were used. And,

3. It is impossible to preserve an even temperature. Sometimes it is too cold, and at other times it is too warm. Several teachers have informed me that in order to keep their fires from going out, it was necessary to have their stoves constantly full of wood, that a portion of it might be seasoning while the rest was burning. Moreover, very offensive and injurious gases are generated in this manner.

There are, perhaps, in the majority of school-houses, a pail for water, cup, and broom, and a chair for the teacher. Some one or more of these are frequently wanting. I need hardly say every school-house should be supplied with them all. In addition to these, every school-house should be furnished with the following articles:—1. An evaporating dish for the stove, which should be supplied with clean pure water. 2. A thermometer, by which the temperature of the room may be regulated. 3. A clock, by which the time of beginning and closing school, and conducting all its exercises, may be governed. 4. A shovel and tongs. 5. An ash-pail and ash-house. For want of these, much filth is frequently suffered to accumulate in and about the school-house, and not unfrequently the house itself takes fire and burns down. 6. A wood-house, well supplied with seasoned wood. 7. A well, with provisions not only for drinking, but for the cleanliness of pupils. 8. At last, though not least, in this connection, two privies, in the rear of the school-house, separated by a high

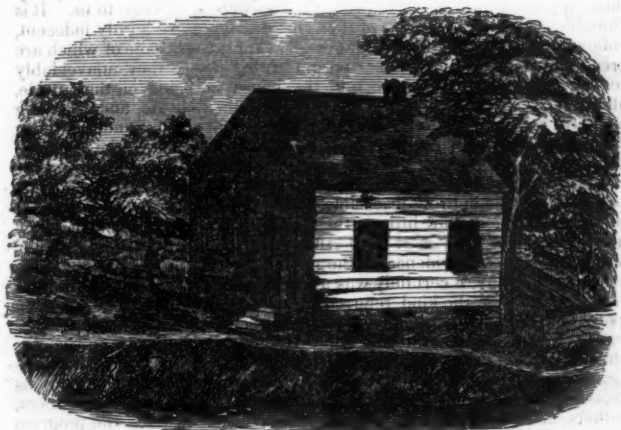
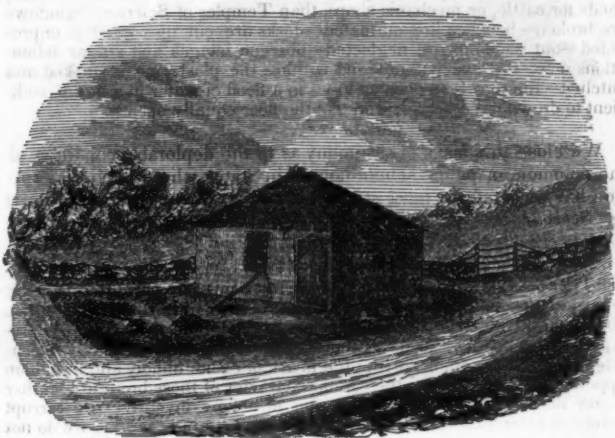
close fence, one for the boys and the other for the girls. For want of these indispensable appendages of civilization, the delicacy of children is frequently offended, and their morals corrupted. Nay, more, the unnatural detention of the *feces*, when nature calls for an evacuation, is frequently the foundation for chronic diseases, and the principal cause of permanent ill health, resulting not unfrequently in premature death.

In architectural appearance, school-houses have more resembled barns, sheds for cattle, or mechanic shops, than Temples of Science,—windows are broken—benches are mutilated—desks are cut up—wood is unprovided—out buildings are neglected—obscene images and vulgar delineations meet the eye without and within—the plastering is smoked and patched—the roof is so open as to let in a flood of water in a storm, sufficient to drown out a school, were not the floor equally open."

We close this mass of testimony as to the deplorable condition of the common, or public school-houses in States where public instruction has received the most attention, with an extract from a "*Report on School-houses published by order of the Directors of the Essex County Teachers' Association in 1833.*"

"There is one subject more to which we must be permitted to refer. One in which the morals of the young are intimately connected, one in which parents, instructors, and scholars, should unite their efforts to produce a reform; there should be nothing in or about school-houses, calculated to defile the mind, corrupt the heart, or excite unholy and forbidden appetites; yet considering the various character of those brought together in our public schools, and considering also how inventive are corrupt minds, in exhibiting openly the defilement which reigns within, we do not know but we must expect that school-houses, as well as other public buildings, and even fences, will continue to bear occasional marks both of lust and profaneness. But we must confess that the general apathy which apparently exists on this subject, does appear strange to us. It is a humbling fact, that in many of these houses, there are highly indecent, profane, and libidinous marks, images and expressions, some of which are spread out in broad characters on the walls, where they unavoidably meet the eyes of all who come into the house, or being on the outside, salute the traveler as he passes by, wounding the delicate, and annoying the moral sensibilities of the heart. While there is still a much greater number in smaller character, upon the tables and seats of the students, and even in some instances, of the instructors, constantly before the eyes of those who happen to occupy them. How contaminating these must be, no one can be entirely insensible. And yet how unalarmed, or if not entirely unalarmed, how little is the mind of community directed to the subject, and how little effort put forth to stay this fountain of corruption. We will mention as evidence of the public apathy, one house which we suppose is this day, it certainly was a few months since, defiled by images and expressions of the kind referred to, spread out in open observation upon its walls, which are known to have been there for eight or ten years. In this building during all this time, the summer and winter schools have been kept; here the district have held their business meetings; here frequently has been the singing-school; here, too, religious meetings have often been held; here, too, the school committee, the fathers, mothers, and friends of the children, have come to witness the progress of their children in knowledge and virtue; all of whom must have witnessed, and been ashamed of their defilement, and yet no effectual effort has been put forth to remove them.

The following views are engraved from "Daguerrotype Likenesses" of two district school-houses in Connecticut, as they were in 1852, and in which schools were not taught, but "*kept according to law.*" Although a good work has been accomplished within their walls, in years which go back beyond the memory of the oldest inhabitant, they are now neither attractive without, or convenient within.





## PRIMARY SCHOOL IN WESTERLY, R. I.



## VILLAGE SCHOOL-HOUSE IN ALLENDALE, N. PROVIDENCE, R. I.





## II. GENERAL PRINCIPLES OF SCHOOL ARCHITECTURE.

1. A location, healthy, accessible from all parts of the district; retired from the dust, noise, and danger of the highway; attractive, from its choice of sun and shade, and commanding, in one or more directions, the cheap, yet priceless educating influences of fine scenery.

2. A site large enough to admit of a yard in front of the building, either common to the whole school or appropriated to greensward, flowers and shrubbery, and two yards in the rear, one for each sex, properly inclosed, and fitted up with rotary swings, and other means of recreation and exercise, and with privies, which a civilized people never neglect.

3. Separate entrances to the school-room for each sex; each entrance distinct from the front door, and fitted up with scraper, mats, and old broom for the feet; with hooks, shelves, &c., for hats, overcoats, over-shoes, and umbrellas; with sink, pump, basin and towels, and with brooms and duster, and all the means and appliances necessary to secure habits of order, neatness and cleanliness.

4. School-room, in addition to the space required by aisles and the teacher's platform, sufficient to accommodate with a seat and desk, not only each scholar in the district who is in the habit of attending school, but all who may be entitled to attend; with verge enough to receive the children of industrious, thoughtful, and religious families, who are sure to be attracted to a district which is blessed with a good school-house and a good school.

5. At least one spare room for recitation, library, and other uses, to every school-room, no matter how small the school may be.

6. An arrangement of the windows, so as to secure one blank wall, and at the same time, the cheerfulness and warmth of the sunlight, at all times of the day, with arrangements to modify the same by blinds, shutters, or curtains.

7. Apparatus for warming, by which a large quantity of pure air from outside of the building can be moderately heated, and introduced into the room without passing over a red-hot iron surface, and distributed equally to different parts of the room.

8. A cheap, simple, and efficient mode of ventilation, by which the air in every part of a school-room, which is constantly becoming vitiated by respiration, combustion, or other causes, may be constantly flowing out of the room, and its place filled by an adequate supply of fresh air drawn from a pure source, and admitted into the room at the right temperature, of the requisite degree of moisture, and without any perceptible current.

9. A desk with at least two feet of top surface, and in no case for more than two pupils, inclined towards the front edge one inch in a foot, except two to three inches of the most distant portion, which should be level, and covered with cloth to prevent noise—fitted with an ink-pot (supplied with a lid and a pen-wiper,) and a slate, with a pencil-holder and a sponge attached, and supported by end-pieces or

stanchions, curved so as to be convenient for sweeping, and to admit of easy access to the seat—these of varying heights for small and large pupils, the front edge of each desk being from seven to nine inches (seven for the lowest and nine for the highest,) higher than the front edge of the seat or chair attached.

10. A chair or bench for each pupil, and in no case for more than two, unless separated by an aisle, with a seat hollowed like an ordinary chair, and varying in height from ten to seventeen inches from the outer edge to the floor, so that each pupil, when properly seated, can rest his feet on the floor without the muscles of the thigh pressing hard upon the front edge of the seat, and with a support for the muscles of the back, rising above the shoulder-blades.

11. An arrangement of the seats and desks, so as to allow of an aisle or free passage of at least two feet around the room, and between each range of seats for two scholars, and so as to bring each scholar under the supervision of the teacher.

12. Arrangements for the teacher, such as a separate closet for his overcoat, &c., a desk for his papers, a library of books of reference, maps, apparatus, and all such instrumentalities by which his capacities for instruction may be made in the highest degree useful.

13. Accommodations for a school library for consultation and circulation among the pupils, both at school and as a means of carrying on the work of self-education at their homes, in the field, or the workshop, after they have left school.

14. A design in good taste and fit proportion, in place of the wretched perversions of architecture, which almost universally characterize the district school-houses of New England.

15. While making suitable accommodation for the school, it will be a wise, and, all things considered, an economical investment, on the part of many districts, to provide apartments in the same building, or in its neighborhood, for the teacher and his family. This arrangement will give character and permanence to the office of teaching, and at the same time secure better supervision for the school-house and premises, and more attention to the manners of the pupils out of school. Provision for the residence of the teacher, and not unfrequently a garden for his cultivation, is made in connection with the parochial schools in Scotland, and with the first class of public schools in Germany.

16. Whenever practicable, the privies should be disconnected from the play-ground, and be approached from a covered walk. Perfect seclusion, neatness and propriety should be strictly observed in relation to them.

17. A shed, or covered walk, or the basement story paved under feet, and open for free circulation of air for the boys, and an upper room with the floor deafened and properly supported for calisthenic exercises for the girls, is a desirable appendage to every school.

### III. PLANS OF SCHOOL-HOUSES.

In determining the details of construction and arrangement for a school-house, due regard must, of course, be had to the varying circumstances of country and city, of a large and a small number of scholars, of schools of different grades, and of different systems of instruction.

1. In by far the largest number of country districts as they are now situated, there will be but one school-room, with a smaller room for recitations and other purposes needed. This must be arranged and fitted up for scholars of all ages, for the varying circumstances of a summer and of a winter school, and for other purposes, religious and secular, than those of a school, and in every particular of construction and arrangement, the closest economy of material and labor must be studied. A union of two or more districts for the purpose of maintaining in each a school for the younger children, and in the center of the associated districts a school for the older children of all or, what would be better, a consolidation of two or more districts into one, for these and all other school purposes, would do away with the almost insuperable difficulties which now exist in country districts, in the way of comfortable and attractive school-houses, as well as of thoroughly governed and instructed schools.

2. In small villages, or populous country districts, at least two school-rooms should be provided, and as there will be other places for public meetings of various kinds, each room should be appropriated and fitted up exclusively for the use of the younger or the older pupils. It is better, on many accounts, to have two schools on the same floor, than one above the other.

3. In large villages and cities, a better classification of the schools can be adopted, and, of course, more completeness can be given to the construction and arrangement of the buildings and rooms appropriated to each grade of schools. This classification should embrace at least three grades—viz. Primary, with an infant department; Secondary, or Grammar; Superior, or High Schools. In manufacturing villages, and in certain sections of large cities, regularly organized Infant Schools should be established and devoted mainly to the culture of the morals, manners, language and health of very young children.

4. The arrangement as to supervision, instruction and recitations, must have reference to the size of the school; the number of teachers and assistants; the general organization of the school, whether in one room for study, and separate class rooms for recitation, or the several classes in distinct rooms under appropriate teachers, each teacher having specified studies; and the method of instruction pursued, whether the mutual, simultaneous, or mixed.

Since the year 1830, and especially since 1838, much ingenuity has been expended by practical teachers and architects, in devising and perfecting plans of school-houses, with all the details of construction and fixtures, modified to suit the varied circumstances enumerated above, specimens of which, with explanations and descriptions, will be here given.

**PLANS OF SCHOOL-HOUSES WITH ONE SCHOOL-ROOM.**

THE largest number of school-houses which are erected with but one school-room, are intended for District, or for Primary Schools.

**DISTRICT SCHOOL.**

By a District School, in this connection, is understood a public school open to all the children of the district, of both sexes, and of the school age recognized by the practice of the district, or the regulations of the school committee of the town to which such district belongs. It is an unclassified school, and is taught in one apartment, by one teacher, usually without any assistance even from older pupils of the school. It varies in the character of its scholars, and its methods of instruction, from summer to winter, and from winter to summer. In summer, the younger children and classes in the elementary studies predominate, and in the winter the older pupils, and classes in the more advanced studies, whilst some of both extremes, as to age and studies, are to be found in both the winter and summer session of the district school. This variety of ages and studies, and consequent variety of classes, increased by the irregularity of attendance, is not only a serious hinderance to the proper arrangement, instruction and government of the school, but presents almost insuperable obstacles to the appropriate construction and furniture of the school-house, which is too often erected on the smallest possible scale of size and expense. A vast amount of physical suffering and discomfort to the pupils is the necessary result of crowding the older and younger pupils into a small apartment, without seats and furniture appropriate to either, and especially when no precaution has been taken to adapt the supply and arrangements of seats and desks according to the varying circumstances of the same school in winter and summer. In every district, or unclassified school, the school-room should be fitted up with seats and desks for the older and younger pupils, sufficient to accommodate the maximum attendance of each class of scholars at any season of the year. And if this cannot be effected, and only a sufficient number of seats can be secured to accommodate the highest number of both sexes in attendance at any one time, then in winter the seats and desks for the smaller children should be removed to the attic, and their place supplied by additional seats and desks for the older pupils; and in summer this arrangement should be reversed.

**PRIMARY SCHOOLS.**

By a Primary School, in our American School Systems, is understood, not generally an Elementary School, embracing a course of instruction for the great mass of the children of the community

under fourteen years of age—but specifically, that class or grade of schools which receive only the youngest pupils, and those least advanced in their studies.

Any scheme of school organization will be imperfect which does not include special arrangements for the systematic training and instruction of very young children, especially in all cities, manufacturing villages, and large neighborhoods. Among the population of such places, many parents are sure to be found, who, for want of intelligence or leisure, of constancy and patience, are unfitted to watch the first blossoming of the souls of their children, and to train them to good physical habits, virtuous impulses, and quick and accurate observations; to cleanliness, obedience, openness, mutual kindness, piety, and all the virtues which wise and far-seeing parents desire for their offspring. The general result of the home training of the children of such parents, is the neglect of all moral culture when such culture is most valuable; and the acquisition of manners, personal habits, and language, which the best school training at a later period of life can with difficulty correct or eradicate. To meet the wants of this class of children, Halls of Refuge and Infant Schools were originally instituted by Oberlin, Owen, and Wilderspin, and now constitute under these names, or the names of Primary Schools, or Primary Departments, a most important branch of elementary education, whether sustained by individual charity, or as part of the organization of public instruction.

No one at all acquainted with the history of education in this country, can doubt that the establishment of the Primary School for children under six years of age, in Boston, in 1818, as a distinct grade of schools, with the modifications which it has since received there, and elsewhere, from the principles and methods of the Infant School system, has led to most important improvements in the quality and quantity of instruction in our public schools, and the sooner a Primary School properly organized, furnished and managed, can be established in every large neighborhood, and especially in the "infected districts" of cities and manufacturing villages, the more rapid and more thorough will be the progress of education.

#### LOCATION, YARD, AND PLAY GROUND.

The site or location of a school-house should be quiet, retired, accessible, attractive, and in all respects healthy. To secure these conditions, no reasonable expense should be spared—for a house thus situated promotes in many ways the highest objects for which a school is instituted.

Noisy and dusty thoroughfares, and the vicinity of places of idle and vicious resort, as well as bleak plains, unsheltered hill tops, and stagnant marshes, should all be avoided, no matter how central, accessible, or cheap the land may be.

In a city or village, a rear lot, with access from two or more streets, will not only be more economical, quiet and safe, but will secure, at the same cost as a narrow front lot, the advantages of a spacious play ground, and admit of the adornments of flower plots, shrubbery, and trees.

In the country, and in small villages, there will be no difficulty, to a liberal and enlightened community or committee, in procuring a spacious lot, attractive from its choice of sun and shade, of trees and flowers, and commanding, in one or more directions, the cheap yet priceless educating influences of fine scenery.

In city or country, a site should be provided, large enough to admit of a yard in front of the building, either common to the whole school, or appropriated to greensward, flowers, and shrubbery, and two yards in the rear, one for each sex, properly graded, inclosed, and fitted up with apparatus for recreation and exercise in all states of the weather, and with privies, which a civilized people never forgets, and in respect to which the most perfect seclusion, neatness, and propriety should be enforced.

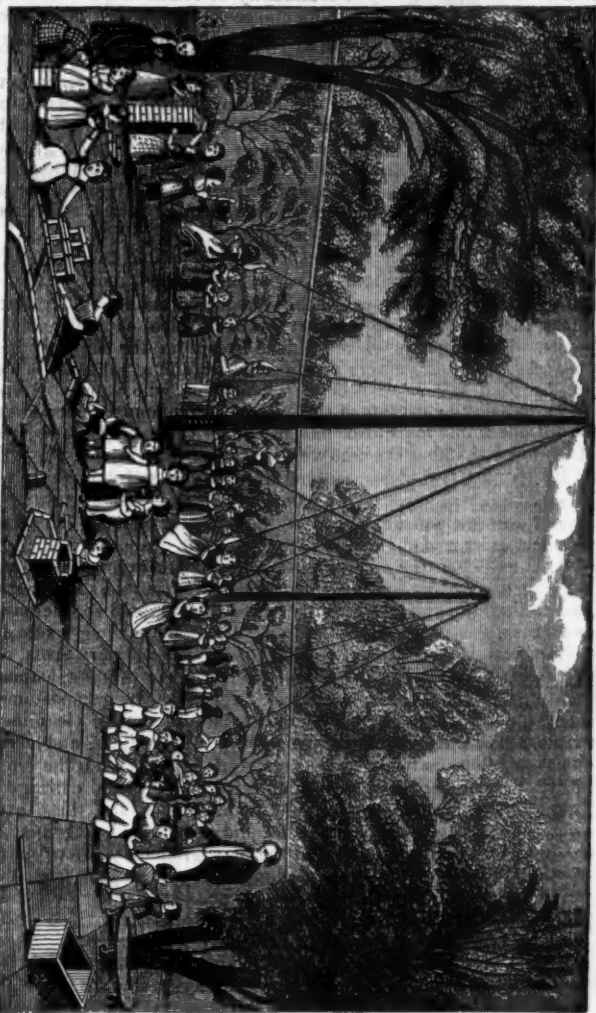
The extent to which facilities for gymnastic and calisthenic exercises shall be introduced into the play-ground, must be determined by the circumstances of the school, and mainly by the place which they are to occupy as part of the physical education of the pupils. For purposes of recreation, except in the simplest and cheapest form, and for very young children, and at all times under the direction and supervision of the teacher, who should be specially trained to superintend the exercises and amusements of the play ground, this apparatus has not much value. When pursued at all times, without system, without reference to age, or strength, or the purposes intended, without direction, from day to day for a whole term, the exercises become wearisome, the apparatus is abused, and serious accidents not unfrequently occur. But when gymnastics can be taught and practiced as a regular branch of education—when the more difficult fetes of activity, strength, and endurance, are attained by elementary trials of various sorts, graduated to the age and constitution of each pupil, and so alternated as to keep the interest constantly alive—when walking exercises in the field, or to remarkable places, and even ordinary spots, are occasionally substituted for the military drill, and running, leaping, vaulting, balancing, climbing, and lifting, in the gymnasium—when the incidental acquisition of the moral habits of cleanliness in person, neatness in dress, punctuality, promptitude, and obedience, is made a matter of even greater importance than the direct result of muscular development, an erect and graceful carriage, a firm and regular step, which are the direct objects of these exercises—then, they are truly valuable, and every facility for their introduction should be provided in the play ground. Whenever introduced, the machines and instruments should be constructed of the best material and by the best workmen, for life and limb must not be endangered to save expense in these respects.

The following cuts and description may be useful to an ingenious carpenter, who can not consult a systematic treatise on gymnastics.\* The cut which follows, of a play-ground for an infant, or primary school, is copied from Wilderspin's *Early Education*. We should prefer to see a female teacher presiding over the scene.

\* See INSTRUCTIONS IN GYMNASTICS, containing a full description of more than eight hundred exercises, and illustrated by five hundred engravings, By J. E. D'Alfonse, late professor of Gymnastics in the Military School in St. Petersburg, and in Paris. New York: George F. Nesbit & Co., Wall street. 1851.



In the case of small villages, there will be no difficulty in finding a site for the school, and the community of course will be more ready to contribute to its support.



Play Ground for an Infant or Primary School

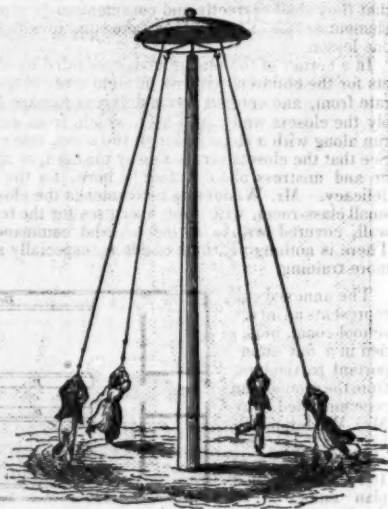
The school should be so arranged as to be convenient for the children, and the site should be chosen so as to be healthy and pleasant. The school should be so arranged as to be convenient for the children, and the site should be chosen so as to be healthy and pleasant.



The house should stand in a dry and airy situation, large enough to allow a spacious play ground. No pains should be spared on this principal and paramount department of a proper infant school. The more extensive the ground may be, the better; but the smallest size for 200 children ought to be 100 feet in length, by at least 60 in breadth. It should be walled round, not so much to prevent the children from straying, as to exclude intruders upon them, while at play: for this purpose, a wall or close paling, not lower than six feet high, will be found sufficient. With the exception of a flower border, from four to six feet broad all round, lay the whole ground, after leveling and draining it thoroughly, with small *binding* gravel, which must be always kept in repair, and well swept of loose stones. Watch the gravel, and prevent the children making holes in it to form pools in wet weather; dress the flower border, and keep it always neat; stock it well with flowers and shrubs, and make it as gay and beautiful as possible. Train on the walls cherry and other fruit trees and currant bushes; place some ornaments and tasteful decorations in different parts of the border—as a honeysuckle bower, &c., and separate the dressed ground from the graveled area by a border of strawberry plants, which may be protected from the feet of the children by a skirting of wood on the outside, three inches high, and painted green, all round the ground. Something even approaching to elegance in the dressing and decking of the playground, will afford a lesson which may contribute to refinement and comfort for life. It will lead not only to clean and comfortable dwellings, but to a taste for decoration and beauty, which will tend mainly to expel coarseness, discomfort, dirt, and vice, from the economy of the humbler classes.

For the excellent and safe exercise afforded by the *Rotary Swing*, erect, at the distance of thirty feet from each other, two posts or masts, from sixteen to eighteen feet high above the ground; nine inches diameter at the foot, di-

minishing to seven and a half at top; of good well-seasoned, hard timber; charred with fire, about three feet under ground, fixed in sleepers, and bound at top with a strong iron hoop. In the middle of the top of the post is sunk perpendicularly a cylindrical hole, ten inches deep, and two inches in diameter, made strong by an iron ring two inches broad within the top, and by a piece of iron an inch thick to fill up the bottom, tightly fixed in. A strong pivot of iron, of diameter to turn easily in the socket described, but with as little lateral play as possible, is placed vertically in the hole, its upper end standing 4 inches above it. On this pivot, as an axle, and close to the top of the post, but so as to turn easily, is fixed a wheel of iron, twenty-four inches diameter, strengthened by four



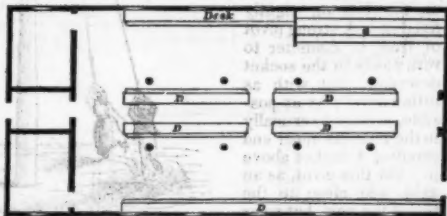
Rotary Swing.

spokes, something like a common roasting-jack wheel, but a little larger. The rim should be flat, two inches broad, and half an inch thick. In this rim are six holes or eyes, in which rivet six strong iron hooks, made to turn in the holes, to prevent the rope from twisting. To these hooks are fixed six well-chosen ropes, an inch diameter, and each reaching down to within two feet of the ground, having half-a-dozen knots, or small wooden balls, fixed with nails, a foot from each other, beginning at the lower extremity, and ascending to six feet from the ground. A tin cap, like a lamp cover, is placed on the top of the whole machine, fixed to the prolongation of the pivot, and a little larger than the wheel, to protect it from wet. To this, or to the wheel itself, a few waggoners' bells appended, would have a cheerful effect on the children. The operation of this swing must, from the annexed cut, be obvious. Four, or even six children, lay hold of a rope each, as high as they can reach, and, starting at the same instant, run a few steps in the circle, then suspend themselves by their hands, drop their feet and run again when fresh impulse is wanted; again swing round, and so on. A child of three or four years old, will often fly several times round the circle without touching the ground. There is not a muscle in the body which is not thus exercised; and to render the exercise equal to both halves of the body, it is important that, after several rounds in one direction, the party should stop, change the hands, and go round in the opposite direction. To prevent fatigue, and to equalize the exercise among the pupils, the rule should be, that each six pupils should have thirty or forty rounds, and resign the ropes to six more, who have counted the rotations.

Toys being discarded as of no use, or real pleasure, the only *plaything* of the playground consists of bricks for building, made of wood, four inches by two and one and a-half. Some hundreds of these, very equally made, should be kept in a large box in a corner of the ground, as the quieter children delight to build houses and castles with them; the condition, however, always to be, that they shall correctly and conscientiously replace in the box the full complement or *tale* of bricks they take out; in which rule, too, there is more than one lesson.

In a corner of the playground, concealed by shrubbery, are two water closets for the children, with six or eight seats in each; that for the boys is separate from, and entered by, a different passage from that for the girls. Supply the closets well with water, which, from a cistern at the upper end, shall run along with a slope under all the seats, into a sewer, or a pit in the ground. See that the closets are in no way misused, or abused. The eye of the teacher and mistress should often be here, for the sake both of cleanliness and delicacy. Mr. Wilderspin recommends the closets being built adjoining the small class-room, with small apertures for the teacher's eye in the class-room wall, covered with a spring lid, and commanding the range of the place. There is nothing in which children, especially in the humbler ranks, require more training.

The annexed cut represents an infant school-room, modified in a few unimportant particulars, from the ground plan recommended by Mr. Wilderspin in his "*Early Education*," published in 1840. The original plan embraces a dwelling for the teacher's family, and two school-rooms, one for the boys and the other for the girls, each school having a gallery, class-room, and playground. The school-room is about 60 feet long by 38 wide, and the class-rooms each 13 ft. by 10. D. Desks and Seats. G. Gallery, capable of accommodating 100 children.



The chief requisites in an infant-school play-ground are the following : A Climbing Stand ; a Horizontal Bar ; Parallel Bars ; Wooden Swings ; a Double Inclined Plane.

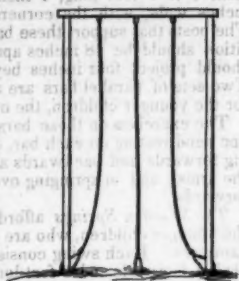
The Climbing Stand consists essentially of a frame-work of poles, which support ropes for climbing. One of the most simple and economical is made of two ordinary scaffold poles, planed smooth and painted, which support a transverse beam having hooks, to which the ropes are attached.

The dimensions may be as follows : Length of perpendicular poles, 15 feet, of which 4 feet are sunk in the ground ; circumference of poles at the surface of the ground, 14 inches ; length of transverse beam at top, 9 feet. To this beam are attached, by screwing in, two iron hooks, which support the ropes ; these are 1½ inches in diameter, to afford a firm grasp to the hand. In order that the ropes may not wear through where attached to the hooks, they are spliced round an iron ring, which is grooved on the outer surface to give a firmer hold to the rope. Both the ropes should be attached to the bottom of the poles so as to hang loosely : if not fastened at the bottom, the children use them as swings while clinging to them, and are apt to injure themselves by falling, or others by coming violently in contact with them.

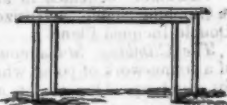
No apparatus is more advantageous : it is economical in its erection, and not liable to get out of order ; it affords exercise to a number of children at the same time, a succession being constantly engaged in climbing and descending the ropes and poles ; the muscular exertion is not violent, but decidedly beneficial, expanding the chest, and giving power and freedom of motion to the arms. This exercise is also quite free from danger, the children never advancing higher up the ropes than they feel themselves secure. During the seven years the Home and Colonial Infant-school has been established, 200 children have been the average attendance, but no accidents have occurred from the use of the climbing-stand.

The Horizontal Bar consists of a wooden bar formed of beech, red deal, or some other tough wood not apt to splinter or warp, about three inches in diameter, and usually six feet long, turned or planed round and smooth, in order that the hands may not be blistered by the friction.

Every play-ground should possess two or three of these useful additions ; one 6 feet from the ground, another 5 feet, and a third 4 feet high,—each one being supported and fixed firmly by a post at both ends. Or they may be arranged so that four posts will support the three bars. The exercises performed on the horizontal bars consist in the child remaining suspended by the arms and hands ; in drawing the body up so as to look over the bar several times in succession ; in traversing from one end of the bar to the other (suspended by the hands,) both backwards and forwards ; in swinging the body whilst suspended from the bar.



The *Parallel Bar* consists of two bars placed parallel with one another, each being from 6 to 8 feet long, 4 inches deep by 3 inches wide, with the corners rounded off. The posts that support these bars in their position should be 18 inches apart. The bars should project four inches beyond the post.



Two sets of parallel bars are advantageous, one being 2 feet 9 inches high for the younger children, the other 4 feet high for the elder.

The exercises on these bars consist in supporting the body on the arms, one hand resting on each bar, and by moving each hand alternately, proceeding forwards and backwards along the bars; in swinging the body between the arms; and in springing over the bar on each side, both backwards and forwards.

The *Wooden Springs* afford a kind of exercise extremely popular with the younger children, who are not sufficiently active to take part in the other exercises. Each swing consists of two distinct parts: 1. A piece of 2-inch deal, 1 foot wide and 3 feet long, one end of which is sunk firmly in the ground, the other projecting 18 inches above the surface. At each edge of this piece is screwed on an iron plate, with an eye to receive the iron pivot on which the upper piece works. The upper, or horizontal piece, is made of 2-inch plank, 1 foot wide and 12 feet long. At each end of this piece three handles, formed of 1½-inch deal, are strongly mortised in, 1 foot apart, thus forming seats for three children at each end. Between the handles the plank should be rounded at the edges, so as to form an easy seat. At the under surface of each end a small block of wood is fixed, to prevent the plank wearing by striking the ground.

The above directions should be adhered to. If the support be made lower, the motion of the swing is much lessened; if the plank be made shorter, or the support higher, the swing approaches too nearly to the perpendicular, and serious accidents may ensue from the children being thrown violently from the seats. The whole should be made as stout as recommended, otherwise it is apt to break from the violent action.



The *Double Inclined Plane* is adapted more especially for the younger children. It consists merely of a support of two-inch deal, 1 foot wide, and projecting 3 feet from the ground. On this is laid the ends of two planks, each 12 feet long, 1 foot wide, and 1½ inch in thickness. On the upper surface of each plank may be nailed, at intervals of eight or ten inches, small cross-pieces, to prevent the feet slipping.



The use of the inclined plane is, that by ascending and descending it, children acquire a facility in balancing themselves. The exercise is beneficial, as it calls into action the muscles of the legs and even of the body. It also furnishes an excellent situation to jump from, as the children can themselves vary the height of the leap at pleasure.

The general use of all these various exercises is, that the different muscles of the body may be strengthened, and the children thus fitted for a future life of labor, and better prepared to escape in case of accidents.

In addition to these simple appliances of the playground, and which are particularly adapted to young children, there are a variety of gymnastic machines or apparatus, designed for the systematic exercise of the entire physical organization of scholars, some of which it would be desirable to provide in some sheltered position of the yard, in all city schools, but which should be accessible only under strict regulations, and the instructions of a well-trained master. As an illustration both of the machines and their arrangement, we give below engravings of the ground plan and principal machines of the gymnasium attached to the Collegiate and Commercial Institute—a private school of the highest grade of William H. Russell, of New Haven—which has the best apparatus which has fallen under our observation in this country.

In the large cut, there will be observed a partition running across the building near the stove and staircase *W*. This marks the limit of a boarded platform at this end, upon which arrangements may be made for a dressing-room, or at least for clothes pegs.

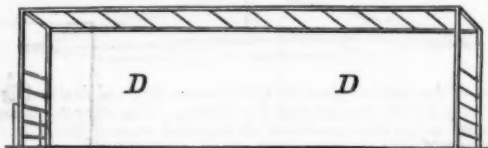
As the letters upon the cuts of single machines designate the same machines in the larger engraving, the descriptions which we will give of them will apply to both.

The *wooden horse*, *A*, is a log, which may be, if preferred, rudely fashioned like a horse's body, and is set upon four legs, about breast high. Two cross-

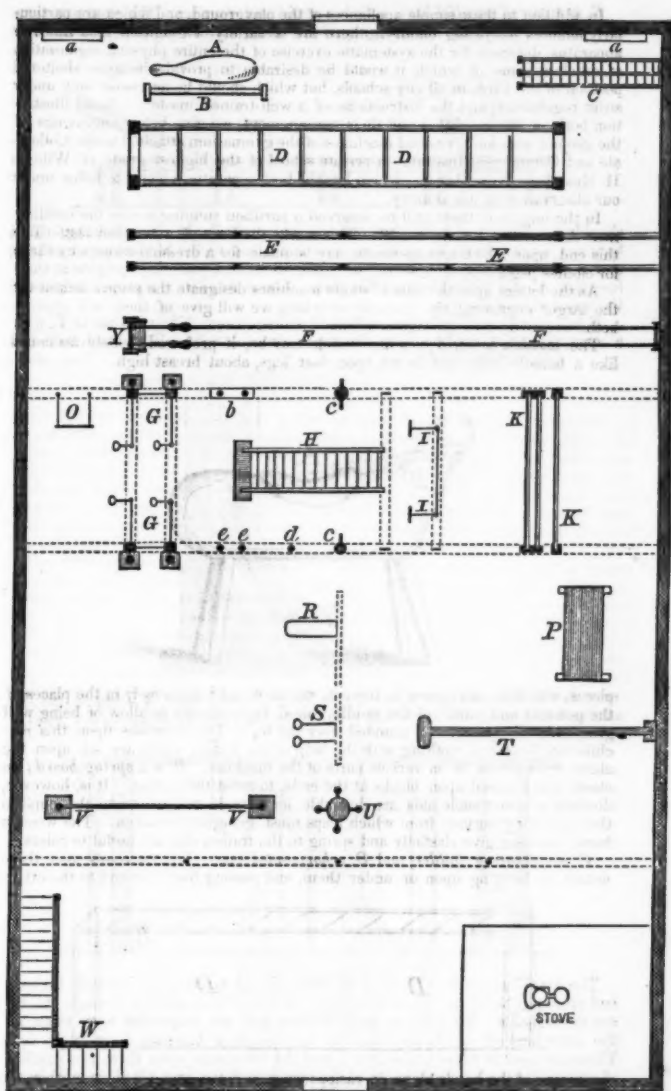


pieces, which do not appear in the cut, should be set transversely in the places of the pommel and cantle of the saddle, raised high enough to allow of being well grasped by the hand, and rounded over the top. The exercises upon this machine are leaps and vaulting with the help of the hands, which are set upon the above cross-pieces, or on various parts of the machine. *B*, is a *spring-board*; an elastic plank raised upon blocks at the ends, to assist the spring. It is, however, doubtful whether such aids are desirable, for they do not habituate the pupil to the unyielding surface from which leaps must generally be taken. The wooden horse exercises give elasticity and spring to the frames and are useful to riders.

*C*, is a *slanting ladder*, and *D*, a *horizontal* one. The exercises upon these consist in hanging upon or under them, and passing from one end to the other,

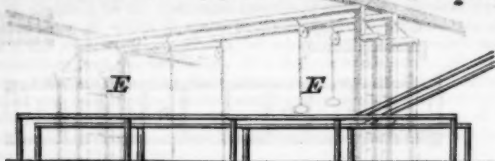


by means of the hands alone, in various ways, and are intended to strengthen the gripe, the arms, and the shoulders. The slanting ladder may run at an angle of about forty-five degrees, from a base about four feet high, to an altitude as great as is convenient.



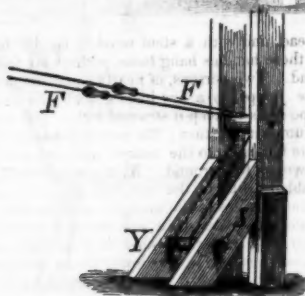
Ground Plan of Gymnasium attached to Russell's Collegiate and Commercial Institute, New Haven.

*E*, is a pair of parallel bars, both horizontal and slanting. The exercises upon this machine widen the shoulders, open the chest, and strengthen that and the



shoulders. They are somewhat difficult, but exceedingly strengthening. The bars are large enough to grasp, say two and a half inches in thickness by three and a half deep, set upon strong uprights, so framed that the uprights at their insertion do not extend beyond the bars. About five feet is a proper height for the upper side of the bars.

*F*, is a pair of inclined ropes, with their sliding-boxes. The windlass at *Y*, with a stout ratchet, is used to keep the ropes strained tight. This machine is not

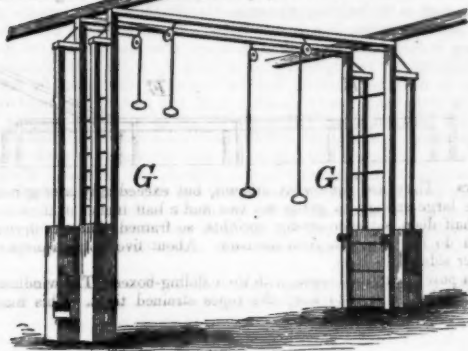


very useful; the principal operation to be performed upon it being to put the sliding-boxes under the arms, and progress up the ropes by swinging the body.

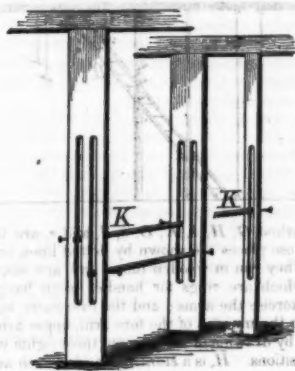


The machines marked *G*, *H*, *I*, *K*, *O*, *e*, *d*, and *c*, are fixed between timbers and cross-pieces, whose places are shown by dotted lines, and the ground. *G*, *G*, are the weights. They run in wooden tubes, and are suspended upon ropes, at the other end of which are rings for handles, seen hanging down in the cut. These are used to exercise the arms; and the exercisers upon them are capable of rapidly developing the muscles of the fore arm, upper arm, shoulder and chest. They are performed by drawing or pushing out the weights with the fingers, hands, or feet, in various positions. *H*, is a slanting ladder, such as was above described. *I*, is a double running rope, running over two sheaves set in a cross-piece upon





the timbers overhead, and with a stout wooden handle, hung by the middle, at each end; so that these handles hang loose, perhaps six feet apart, and five or six feet from the ground. Two persons, of nearly equal weight, are best fitted to use this machine. One jumps up a few inches, while the other weighs down upon his end of the rope so as to keep it strained tight; and as the first comes down again, the second jumps in his turn; the motion being increased, if desired, until the jumps carry the hands up to the timber overhead, and the lower of the two pupils crouches down to the ground. *K*, is a single and double vaulting bar. The bars are movable in slips in the uprights, and are set at any desired height by iron pegs running in holes in the uprights and through the bars. The bars, either alone or together, are used for performing jumps from the ground, with the hands on the bar, and for various other exercises with the feet off the ground. The vaulting exercises strengthen the lower limbs and give elasticity; the remaining ones are chiefly calculated, as indeed are the majority of the apparatus exercises, to strengthen the body above the waist, and the arms. *O*, is a trapezium or bar-swing; a hard-wood cross-bar, hung by two ropes, and which should be about five and a half or six feet from the ground. The trapezium exercises are numerous, and consist of jumping, swinging, and turning, in many ways.

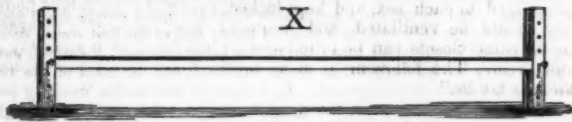


They are not very difficult, and quite pleasant to perform. *c, c*, are two upright ropes for climbing, and *d* is a perpendicular pole for the same purpose. These should be as high as the building arrangements will allow. *c, c*, are upright poles, with pegs in them fitting loosely into holes. These poles are to be climbed by taking a peg in each hand and setting them one after another into the holes. At *b*, in the large cut, are two upright poles at about the width of the shoulders apart. These may be used for climbing, and for exercising the chest, by holding the poles, one in each hand, nearly shoulder high, and pushing the head and shoulders through between them. *P*, is a wide spring-board for jumping forward. *R*, is a rope swing. *S*, is a pair of iron rings, hung upon single ropes from a bar overhead, about as high as the trapezium; and the exercises upon them are of the same character, though more varied, difficult, and pleasant. They demand and develop great quickness, and strength of arm and chest, and, if practiced with care, are among the most useful of the gymnastic exercises.

*T*, is a spring-beam set firmly into the wall, and resting upon a fulcrum a short distance from it, so as to furnish considerable elastic force. It is used for perpendicular jumping.

*U*, is a flying-machine or rotary-swing, which is described on page 86.

*V*, is a movable leaping-stand, for standing or running jumps. It consists of two light uprights, set in heavy bases, so as to stand firmly, and with a row of holes, an inch or two apart, at corresponding heights in each. Pegs fit into these, over which, at any desired height, may be hung a string with a weight of about five pounds at each end. By this means all danger of catching the feet in jumping is avoided, as a light touch throws the string off the pegs.



*X*, (which does not appear on the large cut) is a horizontal beam; a stout square stick of hard wood about twenty feet long, with tenons at each end, running in slits in the uprights. Iron pins pass through the uprights, and through holes in the tenons, and hold the beam at any height desired. The uprights may stand about four feet above the surface of the ground, and the holes in them may be three inches apart. The beam should be not less than four inches square. This machine is used for various leg exercises, which are of considerable value.

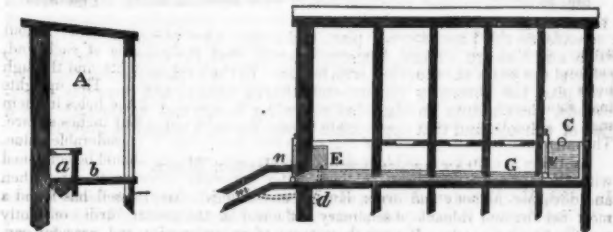
Exercises in marching, military drill, walking, and running, should be combined with the apparatus exercises, as these latter generally serve as to strengthen and develop the body and arms more than the legs. Mr. Russell has found a most healthy and valuable disciplinary influence in the military drill constantly practiced by his pupils. It gives them promptness, an upright and graceful carriage, and habits of regularity and quick obedience. They exercise with cadet muskets, which are stored in a small loft in one end of the gymnasium, and are organized into a very neat uniform company.

All gymnastic apparatus should be made of the best materials and put together in the best manner, in order to withstand the great strain to which it is subject, and to prevent accidents from breaking. Most or all of the uprights should be strongly framed, and braced into mud-sills at least two feet under ground. No exercises should be ordinarily allowed in the gymnasium, except in the presence and under the directions of a competent and reliable teacher. The exercises should be reduced to a regular and progressive system, and should be performed with as much regularity and care as those of the school recitations; according to the instructor's directions, and by no means according to the caprice of the pupils. This precaution will almost certainly prevent the accidents whose occurrence is so often used as an argument against gymnastics, and ill-directed efforts to perform the harder exercises before the easier are mastered; it will likewise insure a proper amount of drilling, thorough acquisition, and the utmost pleasure and advantage to the pupils.

Every school-house should be provided with a room, where the pupils can resort, before and after school and during recess, in unpleasant weather; with a shed, or other suitable place for fuel, which should be supplied of the best quality, in due season, and in the right condition for use; with a well, or other mode of furnishing pure water; and with a bell, large enough to be heard over the district from which the school is gathered.

No department of school architecture among us requires such immediate and careful attention as the arrangement and construction of privies. In none is there now such niggardly economy, or outrageous disregard to health, modesty, and morals, practiced. Over this portion of the school premises the most perfect neatness, seclusion, order, and propriety should be enforced, and every thing calculated to defile the mind, or wound the delicacy or modesty of the most sensitive should be immediately removed, and any vulgarity in respect to it, on the part of the pupils, should receive attention in private, and be made a matter of parental advice and co-orporation. Neglect in this particular, on the part of the community, in providing suitable buildings and premises, or of the teacher, in enforcing proper regulations, has been followed with the most disastrous results to the health and happiness of thousands of pupils.

There should be one provided for each sex, widely separated from each other—inclosed from the general play ground,—and accessible by a covered walk, and, if practicable, from the basement, or clothes-room appropriated to each sex, and kept locked, except during school-hours. They should be ventilated, and frequently and thoroughly cleansed. Where water closets can be introduced, it will be a wise economy to adopt them. The following plan is copied from "*Richson's School-Builder's Guide*."



- A—Cross sections, without the end wall and entrance.
  - a—The seat, with water channel to the level of the floor. At the back and front of *a*, dipping 1 inch into the water, is a Valentinia slate, 1 inch thick. The channel, although here drawn angular, would be better of an oval form.
  - b—The level of floor.
  - B—Longitudinal section.
  - C—Cistern, supplied by ball tap, with sliding valve to lift and flush the channel G.
  - E—(With line above) a sloping Valentinia slate, 1½ feet high, to form urinal, dipping 1 inch into the water.
  - n—A sliding valve to lift and let off water.
  - m—An inclined trough or drain to carry off water when the channel is flushed by opening valves *c* and *n*.
  - d—An escape pipe, bent to form a trap at *d*, fixed at the level of the floor, behind the girt in the corner of *E*, to carry off superfluous water.
- The valves, at *c*, and *n*, being opened every evening, or more frequently, will thoroughly cleanse the channel; and the valve at *n* being first shut, the channel G may be filled before *c* is closed.

## 1. PLANS OF SCHOOL-HOUSES RECOMMENDED BY PRACTICAL TEACHERS AND EDUCATORS.

### PLAN, &c. RECOMMENDED BY DR. ALCOTT, AND BY THE AMERICAN INSTITUTE OF INSTRUCTION.

In 1830 the American Institute of Instruction offered a premium for the best Essay "*On the Construction of School-houses*," which was awarded in Aug. 1831, to Dr. William A. Alcott, of Hartford. The Prize Essay\* was published in the proceedings of the Institute of the same year, together with a "*Plan for a Village School-house*," devised by a Committee of the Directors of the Institute.

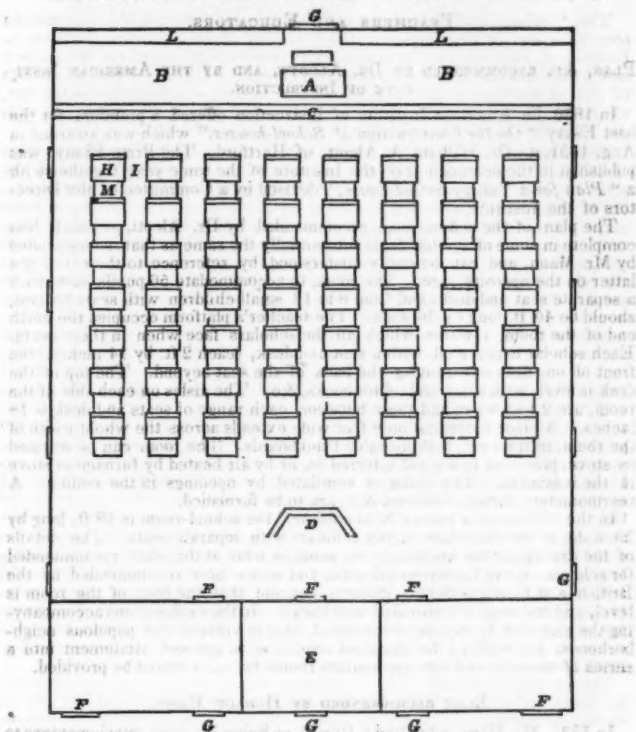
The plan of the school-room recommended by Dr. Alcott, although less complete in some of its details, is substantially the same as that recommended by Mr. Mann, and can be easily understood by reference to the cut of the latter on the opposite page. The room, to accommodate 56 pupils each, with a separate seat and desk, and from 8 to 16 small children with seats for two, should be 40 ft. long by 30 wide. The teacher's platform occupies the north end of the room, towards which all the scholars face when in their seats. Each scholar is provided with a seat and desk, (each 2 ft. by 14 inches,) the front of one desk constituting the back of the seat beyond. The top of the desk is level, with a box and lid for books, &c. The aisles on each side of the room, are 2 feet wide, and those between each range of seats and desk is 18 inches. A place for recitation 8 feet wide extends across the whole width of the room, in the rear, with movable blackboards. The room can be warmed by stove, placed as in the cut referred to, or by air heated by furnace or stove in the basement. The room is ventilated by openings in the ceiling. A thermometer, library, museum, &c., are to be furnished.

In the "*Plan for a village School-house*," the school-room is 48 ft. long by 35 wide, to accommodate eighty scholars with separate seats. The details of the arrangements are nearly the same as were at that date recommended for schools on the Lancasterian plan, and as are now recommended by the British and Foreign School Society—except that the floor of the room is level, and the seats are provided with backs. In the explanations accompanying the plan, the Directors recommend, that in villages and populous neighborhoods, the children be classified according to age and attainment into a series of schools, and that appropriate rooms for each school be provided.

### PLAN RECOMMENDED BY HORACE MANN.

In 1838, Mr. Mann submitted a Report on School-houses, supplementary to his "*First Annual Report as Secretary of the Massachusetts Board of Education*," which discusses the whole subject of school architecture with great fulness and ability. This document may be found entire in the Massachusetts Common School Journal, Vol. 1., and nearly so, in the Connecticut Common School Journal, Vol. 1., and the New York District School Journal, Vol. 3. It fixed public attention on the defects of these edifices, and has led to extensive improvement all over that Commonwealth. During the five years immediately following its publication, over \$516,000 were expended in the construction of 405 new houses, including land, fixtures, &c., and over \$118,000, in the substantial repairs of 429 more. The larger portion of the first sum has been expended in the cities and large villages in the eastern part of the state, where may now be seen specimens of the best school-houses, and the best schools, in our country. The following plan embodies substantially the views submitted by Mr. Mann, in his Report.

\* This Essay of Dr. Alcott was the pioneer publication on this subject. It was followed in 1833 by a "*Report on School-houses*" prepared by the Rev. G. B. Perry, and published by the Essex County Teacher's Association. This last is a searching and vigorous exposition of the evils resulting from the defective construction, and arrangements of school-houses, as they were at that date almost universally found.



**A.** Represents the teacher's desk. **BB.** Teacher's platform, from 1 to 2 ft. in height. **C.** Step for ascending the platform. **LL.** Cases for books, apparatus, cabinet, &c. **H.** Pupils' single desks, 2 ft. by 18 inches. **M.** Pupils' seat, 1 ft. by 20 inches. **I.** Aisles, 1 ft. 6 inches in width. **D.** Place for stove, if one be used. **E.** Room for recitation, for retiring in case of sudden indisposition, for interview with parents, when necessary, &c. It may also be used for the library, &c. **FFFFF.** Doors into the boys' and girls' entries—from the entries into the school-room, and from the school-room into the recitation room. **GGGGG.** Windows. The windows on the sides are not lettered.

For section of seat and desk constructed after Mr. Mann's plan, see p. 47. To avoid the necessity of fitting up the same school-room for old and young, and the inefficiency of such country schools as we now have, Mr. Mann proposed in this Report a union, for instance of four districts which did not cover more than four miles square, and the erection of four primary school-houses, (a a a a) for the younger children of each district, to be taught by female teachers, and one central or high school, (A) for the older children of the four districts, taught by a well qualified male teacher. This plan is recommended for its wise use of the means of the districts, and the efficiency of the instruction given.



## PLANS, &amp;c., RECOMMENDED BY GEORGE B. EMERSON.

The "School and Schoolmaster,"\* contains a very valuable chapter on school-houses, by Mr. Emerson, the President of the American Institute of Instruction, illustrated by drawings, which, with the permission of the authors and publishers are introduced here. The whole chapter, as the production of one of the most eminent teachers and writers on education of the age, should be studied by every one who would become thoroughly acquainted with the subject. Most of his valuable suggestions are subjoined.

*Situation.*—So much do the future health, vigor, taste, and moral principles of the pupil depend upon the position, arrangement, and construction of the school-house, that everything about it is important. When the most desirable situation can be selected, and the laws of health and the dictates of taste may be consulted, it should be placed on firm ground, on the southern declivity of a gently sloping hill, open to the southwest, from which quarter comes the pleasantest winds in summer, and protected on the northeast by the top of the hill or by a thick wood. From the road it should be remote enough to escape the noise, and dust, and danger, and yet near enough to be easily accessible by a path or walk, always dry. About it should be ample space, a part open for a play-ground, a part to be laid out in plots for flowers and shrubs, with winding alleys for walks. Damp places, in the vicinity of stagnant pools or unwholesome marshes, and bleak hilltops or dusty plains, should be carefully avoided. Tall trees should partially shade the grounds, not in stiff rows or heavy clumps, but scattered irregularly as if by the hand of Nature. Our native forests present such a choice of beautiful trees, that the grounds must be very extensive to afford room for even a single fine specimen of each; yet this should, if possible, be done, for children ought early to become familiar with the names, appearance, and properties of these noblest of inanimate things. The border of a natural wood may often be chosen for the site of a school; but if it is to be thinned out, or if trees are to be planted, and, from limited space, a selection is to be made, the kingly, magnificent oaks, the stately hickories, the spreading beech for its deep mass of shade, the maples for their rich and abundant foliage, the majestic elm, the useful ash, the soft and graceful birches, and the towering, columnar sycamore, claim precedence. Next may come the picturesque locusts, with their hanging, fragrant flowers; the tulip-tree; the hemlock, best of evergreens; the celtis, or sweet gum; the nyssa, or tupelo, with horizontal branches and polished leaves; the walnut and butternut, the native poplar, and the aspen.

Of extremely beautiful American shrubs, the number is so great that I have no room for a list. What place intended to form the taste of the young, should be without the kalmias, rhododendrons, cornels, roses, viburnums, magnolias, clethras, honeysuckles, and spireas! And whoever goes into the woods to gather these, will find a multitude of others which he will hardly consent to leave behind. The hilltop should be planted with evergreens, forming, at all seasons, a barrier against the winds from the north and east.

Of the flower plots, little need be said. They must be left to the taste of the teacher, and of cultivated persons in the district. I can only recommend our wild American plants, and again remind the reader, that there is hardly a

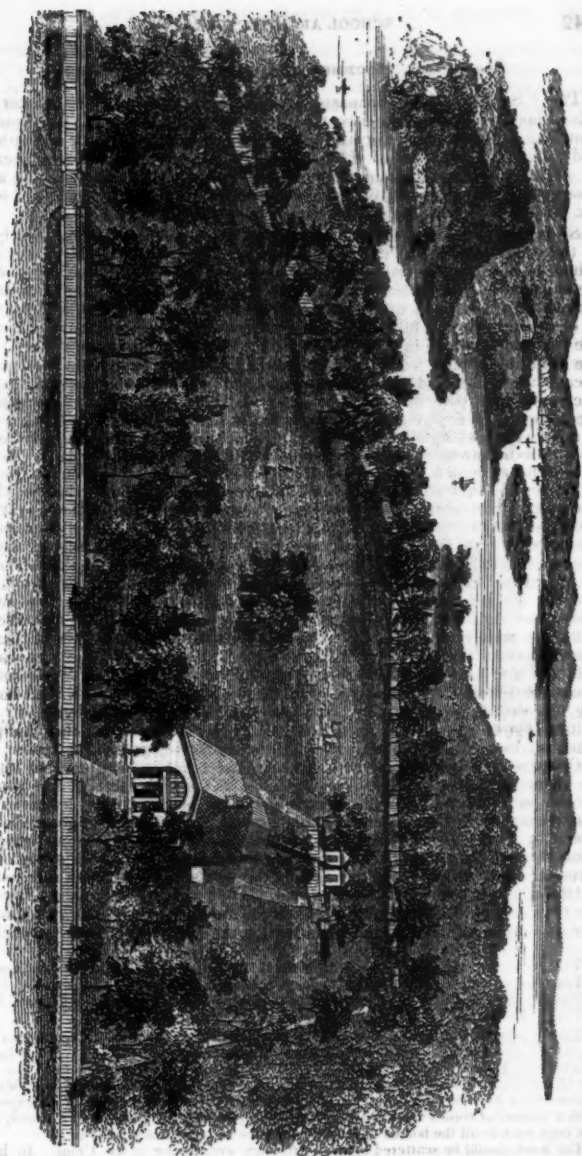
\* The "School and Schoolmaster," a Manual for the use of Teachers, Employers, Trustees, Inspectors, &c., &c., of Common Schools. Part I. By Alonzo Potter, D. D. Part II. By George B. Emerson. pp. 562. Harper & Brothers, 62 Cliff street, New York. Price, \$1.

This excellent treatise, the most valuable contribution yet made to the educational literature of our country, was prepared and published originally at the expense of James Wadsworth, Esq., of Genesee, N. Y., in 1842. By him a copy was presented to each of the 11,000 school districts of that state. Following this noble example, the Hon. Martin Brimmer, the present mayor of the city of Boston, caused to be printed, at his expense, such a number of copies as would supply one copy each to all the school districts, and one copy each to all the boards of school committee men, in Massachusetts.

The work should be distributed through every state in the Union. In large orders, or for gratuitous distribution, it can be had of the publishers at a very low rate.



Perspective of School-house, Outbuilding, and Grounds.





[illegible]

100



Schoolhouse



tion of a



Front Project

1. The following information should be provided for each collection:

1. The first group of authors (e.g., [1, 2]) considers the problem of the stability of the motion of a system of particles in the field of a central body. The results of these studies are used in the theory of the motion of celestial bodies in the field of a central body.

country town in New York or New England, from whose woods and meadows a hundred kinds of flowers might not be transplanted, of beauty enough to form the chief ornament of a German or English garden, which are now neglected only because they are common and wild. Garden flowers need not be excluded; and if either these or the former are cultivated, the great object, to present something to refine and inform the taste, will be, in some degree, accomplished.

If proper inclosed play-grounds are provided, the master may often be present at the sports, and thus become acquainted with the character, of his pupils. If children are compelled to resort to the highway for their amusements, we ought not to wonder that they should be contaminated by the vices, brawlings, and profanities, which belong to frequenters of highways.

*Size.*—The room should be sufficiently large to allow every pupil, 1. to sit comfortably at his desk; 2. to leave it without disturbing any one else; 3. to see explanations on his lessons, and to recite without being incommoded or incommoding others; 4. to breathe a wholesome atmosphere.

If the first three objects are fully provided for, the space on the floor will be sufficient. But to secure the advantage of an adequate supply of air, the room must be not less than 10, and, if possible, 12 or 14, feet high.

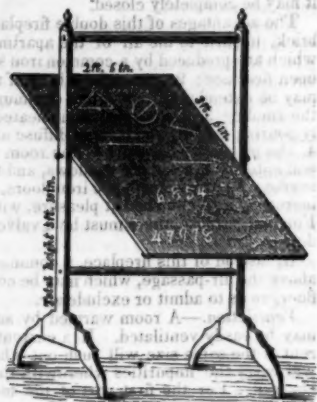
*Arrangement.*—For the accommodation of 56 scholars, so as to give ample room for moving, for recitations, and for air, the dimensions of the house should be 38 feet by 25, and 10 feet in height within. This will allow an entry of 14 feet by 7½, lighted by a window, to be furnished with wooden pegs for the accommodation of clothes; a wood-room, 10 feet by 7½, to serve also as an entry for girls at recess, or as a recitation room; a space behind the desks 8 feet wide, for fireplace, passage, and recitations, with permanent seats against the wall 10 or 11 inches wide; a platform, 7 feet wide, for the teacher, with the library, blackboards, globes, and other apparatus for teaching; the remaining space to be occupied by the desks and seats of the scholars. For every additional 8 scholars the room may be lengthened 2½ feet. The desks and seats for scholars should be of different dimensions. A desk for two may be 3½ or 4 feet long. If the younger children are placed nearest the master's desk, the desks in the front range may be 13 inches wide, the two next 14, the two next 15, and the two most remote 16, with the height, respectively, of 24, 25, 26, and 27 inches. The seats should vary in like manner. Those in the front range should be 10 inches wide, in the two next 10½, in the two next 11, in the two last 11½ or 12; and 13½, 14, 15, and 16 inches, respectively, high. All edges and corners are to be carefully rounded.

It is very desirable that the north end of the school-house be occupied by the master's desk; that this end be a dead wall; that the front be towards the south; and that the desks be so placed that the pupils, as they sit at them, shall look towards the north. The advantages of this arrangement are, 1. that the scholars will obtain more correct ideas upon the elements of geography, as all maps suppose the reader to be looking northward; 2. the north wall, having no windows, will exclude the severest cold of winter; 3. the scholars will, in this case, look towards a dead wall, and thus avoid the great evil of facing a glare of light; or, if a window or two be allowed in the north wall, the light coming from that quarter is less vivid, and, therefore, less dangerous, than that which comes from any other; 4. the door, being on the south, will open towards the winds which prevail in summer, and from the cold winds of winter.

If, from necessity, the house must front northward, the master's desk should be still in the north end of the room, and the scholars, when seated, look in that direction.

The end of the room occupied by the master should be fitted with shelves for a library and for philosophical apparatus and collections of natural curiosities, such as rocks, minerals, plants, and shells, for globes and for blackboards. The books, apparatus, and collections should be concealed and protected by doors, which may be made perfectly plain and without panels, so as to be painted black and serve as blackboards. They may be conveniently divided by pilasters into three portions, the middle one for books, the others

for apparatus and collections. On one of the pilasters may be the clock; on the other a barometer and thermometer; on shelves in the corners, the globes, and over the library in the center, the study card. One of the pilasters may form part of the ventilating tube. The master's platform may be raised eight inches. For all these purposes, the space in front of the ranges of scholars' desks, should be not less than seven or eight feet wide; ten or twelve would be much better. The sides and front of this space should be furnished with seats ten or eleven inches wide, for recitation. By means of a large movable blackboard, this space may be, in case of need, converted into two, so that two classes may recite at a time. In a school intended to accommodate more than 64 pupils, there ought also to be a space for recitation in the south end of the room, separable by movable blackboards into two.

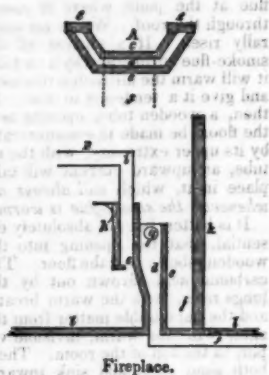


Movable Blackboard.

The entry should be lighted by a window, and be furnished with wooden or iron pins for the accommodation of hats, bonnets, and cloaks; and there should be a wood-closet large enough to contain two or three cords of wood, which may, if it is preferred, be used as a recitation room.

By making the ceiling of the entry and wood-closet only seven feet high, two commodious rooms for recitation may be formed above them, lighted from the window over the front door, and accessible by stairs from within the school-room.

**Warming.**—In a suitable position, pointed out in the plates, near the door, let a common brick fireplace be built. Let this be inclosed, on the back and on each side, by a casing of brick, leaving, between the fireplace and the casing, a space of four or five inches, which will be heated through the back and jambs. Into this space let the air be admitted from beneath by a box 24 inches wide and 6 or 8 deep, leading from the external atmosphere by an opening beneath the front door, or at some other convenient place. The brick casing should be continued up as high as six or eight inches above the top of the fireplace, where it may open into the room by lateral orifices, to be commanded by iron doors, through which the heated air will enter the room. If these are lower, part of the warm air will find its way into the fireplace. The brick chimney should



Fireplace.

A. Horizontal section. B. Perpendicular section. c. Brick walls, 4 inches thick. d. Air space between the walls. e. Solid fronts of masonry. f. Air box for supply of fresh air, extending beneath the floor to the front door. g. Openings on the sides of the fireplace, for the heated air to pass into the room. h. Front of the fireplace and mantelpiece. i. Iron smoke flue, 8 inches diameter. j. Space between the fireplace and wall. k. Partition wall. l. Floor.

rise at least two or three feet above the hollow back, and may be surmounted by a flat iron, soap-stone, or brick top, with an opening for a smoke-pipe, which may be thence conducted to any part of the room. The smoke-pipe should rise a foot, then pass to one side, and then over a passage, to the opposite extremity of the room, where it should ascend perpendicularly, and issue above the roof. The fireplace should be provided with iron doors, by which it may be completely closed.

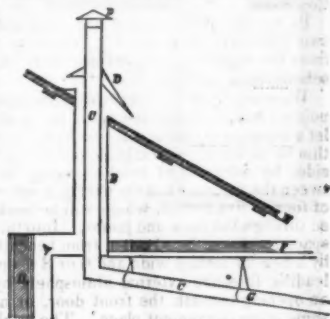
The advantages of this double fireplace are, 1. the fire, being made against brick, imparts to the air of the apartment none of the deleterious qualities which are produced by a common iron stove, but gives the pleasant heat of an open fireplace; 2. none of the heat of the fuel will be lost, as the smoke-pipe may be extended far enough to communicate nearly all the heat contained in the smoke; 3. the current of air heated within the hollow back, and constantly pouring into the room, will diffuse an equable heat throughout every part; 4. the pressure of the air of the room will be constantly outward, little cold will enter by cracks and windows, and the fireplace will have no tendency to smoke; 5. by means of the iron doors, the fire may be completely controlled, increased or diminished at pleasure, with the advantages of an air-tight stove. For that purpose, there must be a valve or slide near the bottom of one of the doors.

If, instead of this fireplace, a common stove be adopted, it should be placed above the air-passage, which may be commanded by a valve or register in the floor, so as to admit or exclude air.

*Ventilation.*—A room warmed by such a fireplace as that just described, may be easily ventilated. If a current of air is constantly pouring in, a current of the same size will rush out wherever it can find an outlet, and with it will carry the impurities wherewith the air of an occupied room is always charged. For the first part of the morning, the open fireplace may suffice. But this, though a very effectual, is not an economical ventilator; and when the issue through this is closed, some other must be provided. The most effective ventilator for throwing out foul air, is one opening into a tube which incloses the smoke-flue at the point where it passes through the roof. Warm air naturally rises. If a portion of the smoke-flue be inclosed by a tin tube, it will warm the air within this tube, and give it a tendency to rise. If, then, a wooden tube, opening near the floor, be made to communicate, by its upper extremity, with the tin tube, an upward current will take place in it, which will always act whenever the smoke-flue is warm.

It is better, but not absolutely essential, that the opening into the wooden tube be near the floor. The carbonic acid thrown out by the lungs rises, with the warm breath, and the perspirable matter from the skin, with the warm, invisible vapor, to the top of the room. There both soon cool, and sink towards the floor; and both carbonic air and the vapor bearing the perspirable matter are pretty rapidly and equally diffused through every part of the room.

*Seats and Desks.*—Instead of a seat and desk for each pupil, Mr. Emerson recommends that two seats should be contiguous. In his drawings, the desk is perfectly level like a table, and the back to the seat is perpendicular.

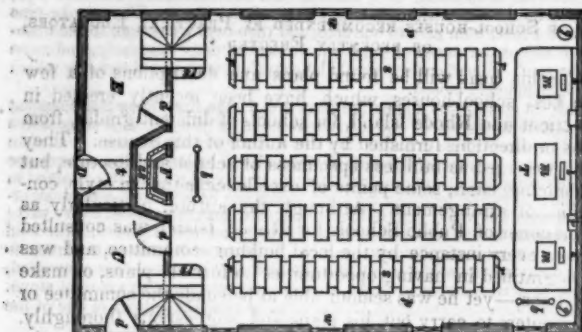


(Scale 8 feet to an inch.)

Ventilating Apparatus.

- A. Air box, 1 foot square, or 24 inches by 6, covered by the pilaster, and opening at the floor, in the base of the pilaster.
- B. Round iron tube 15 $\frac{1}{2}$  inches in diameter, being a continuation of the air box, through the center of which passes
- C. The smoke flue, 8 inches in diameter.
- D. Caps to keep out the rain.

## SCHOOL FOR ONE HUNDRED AND TWENTY PUPILS.

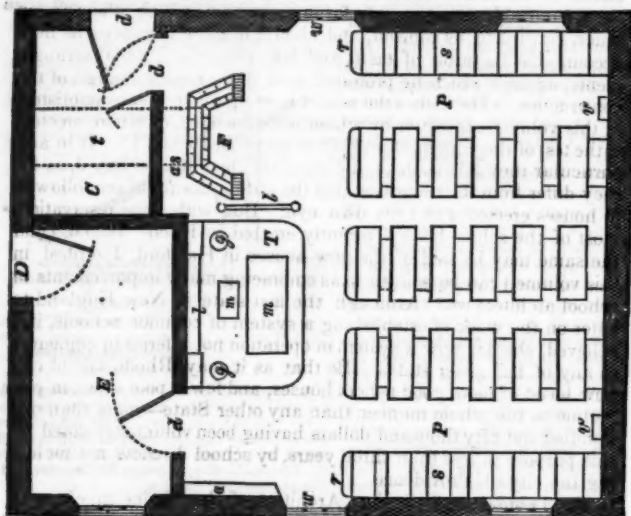


22 feet by 31 feet outside.

(Scale 1/8 inch to the inch.)

D: Entrance door. E: Entry. F: Fireplace. C: Wood closet. T: Teacher's platform. a: Apparatus shelves. t: Air tube beneath the floor. d: Doors. g: Globes. l: Library shelves. m: Master's table and seat. p: Passages. r: Recitation seats. s: Scholars' desks and seats. rs: Stairs to recitation rooms in the attic. v: Ventilator. w: Windows. A: Movable blackboard. a a: Air space behind the fireplace.

## SCHOOL FOR FORTY-EIGHT PUPILS.



24 feet by 33 feet outside.

(Scale 3/8 inch to the inch.)

D: Entrance door. E: Entry. F: Fireplace. C: Wood closet, or recitation room. T: Teacher's platform. a: Apparatus shelves. t: Air tube beneath the floor. d: Doors. g: Globes. l: Library shelves. m: Master's table and seat. p: Passages. r: Recitation seats. s: Scholars' desks and seats. v: Ventilator. w: Windows. A: Movable blackboard. a a: Air space behind the fireplace.

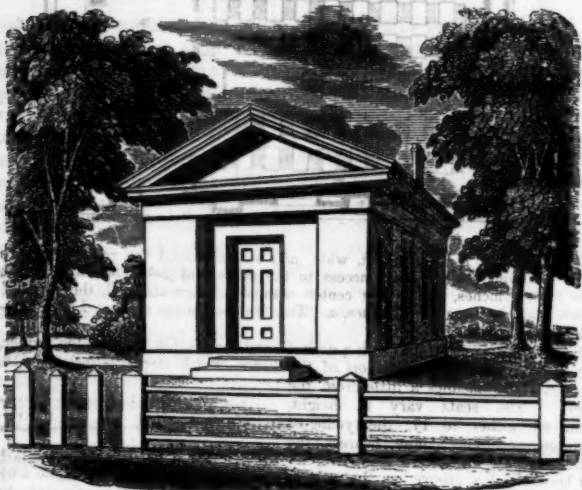
PLANS OF SCHOOL-HOUSES RECOMMENDED BY PRACTICAL EDUCATORS,  
OR RECENTLY ERECTED.

Under this head will be found plans and descriptions of a few of the best school-houses, which have been recently erected in Connecticut and Rhode Island, for schools of different grades, from designs or directions furnished by the author of this treatise. They are not presented as faultless specimens of school architecture, but as embracing, each, some points of excellence, either in style, construction, or arrangement. Although the author, particularly as Commissioner of Public Schools for Rhode Island, was consulted in almost every instance by the local building committee, and was always gratified in having opportunities to furnish plans, or make suggestions,—yet he was seldom able to persuade the committee or the carpenters to carry out his plans and suggestions thoroughly. Something would be taken from the height, or the length, or the breadth;—some objections would be made to the style of the exterior or the arrangement of the interior;—and particularly the plans recommended for securing warmth and ventilation were almost invariably modified, and are in many instances entirely neglected. He desires, therefore, not to be held responsible for the details of any one house as it now stands,—for, being thus held responsible, he should probably receive credit for improvements which others are as much entitled to as himself, and should in more instances be held accountable for errors of taste, and deficiencies in internal arrangements, against which he protested with those having charge of the construction. He wishes the reader to bring all the plans published in this volume, no matter by whom recommended, or where erected, to the test of the principles set forth on pages 9, 10, and 11. If in any particular they fall short of the standard therein established, so far they differ from the designs which the author desires to see followed in houses erected under his own eye. But, with some reservation, most of the school-houses recently erected in Rhode Island, (and the same may be said of the new houses in Hartford, described in this volume,) can be pointed to as embracing many improvements in school architecture. Although the last state in New England to enter on the work of establishing a system of common schools, it is believed, she has now a system in operation not inferior in efficiency to any of her sister states. Be that as it may, Rhode Island can now boast of more good school-houses, and fewer poor ones, in proportion to the whole number, than any other State—more than one hundred and fifty thousand dollars having been voluntarily voted for this purpose in less than three years, by school districts, not including the city of Providence.

To Thomas A. Telf, Esq., Architect, of Providence, much credit is due for the taste which he has displayed in the designs furnished by him, and for the elevations which he drew for plans furnished or suggested by the Commissioner. He should, not, however, be held responsible for the alterations made in his plans by the committees and carpenters having charge of the erection of the building. With all their imperfections of execution, Mr. Telf's plans are among the best specimens of School Architecture.



## PLAN AND DESCRIPTION OF SCHOOL-HOUSE IN WINDSOR, Ct.



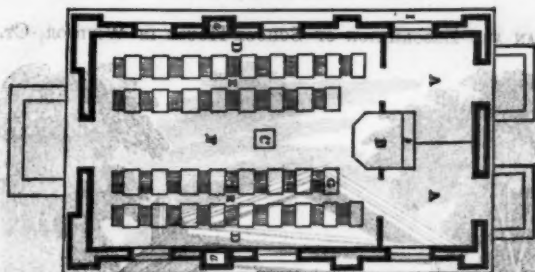
The building stands 60 ft. from the highway, near the center of an elevated lot which slopes a little to the south and east. Much the larger portion of the lot is in front, affording a pleasant play ground, while in the rear there is a woodshed, and other appropriate buildings, with a separate yard for boys and girls. The walls are of brick, and are hollow, so as to save expense in securing the antaes or pilasters, and to prevent dampness. This building is 33 ft. 6 inches long, 21 ft. 8 inches wide, and 18 ft. 9 inches high from the ground to the eaves, including 2 ft. base or underpinning.

The entries A A, one for boys and the other for girls, are in the rear of the building, through the woodshed, which, with the yard, is also divided by a partition. Each entry is 7 ft. 3 inches, by 9 ft. 3 inches, and is supplied with a scraper and mat for the feet, and shelves and hooks for outer garments.

The school-room is 24 ft. 5 inches long, by 19 ft. 4 inches wide, and 15 ft. 6 inches high in the clear, allowing an area of 472 ft. including the recess for the teacher's platform, and an allowance of 200 cubic feet of air to a school of 36.

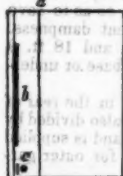
The teacher's platform B, is 5 ft. 2 inches wide, by 6 ft. deep, including 3 ft. of recess, and 9 inches high. On it stands a table, the legs of which are set into the floor, so as to be firm, and at the same time movable, in case the platform is needed for declamation, or other exercises of the scholars. Back of the teacher is a range of shelves, already supplied with a library of near 400 volumes, and a globe, outline maps, and other apparatus. On the top of the case is a clock. A blackboard 5 ft. by 4, is suspended on weights, and steadied by a groove on each end, so as to admit of being raised and lowered by the teacher, directly in front of the book case, and in full view of the whole school. At the bottom of the blackboard is a trough to receive the chalk and the sponge, or soft cloth.



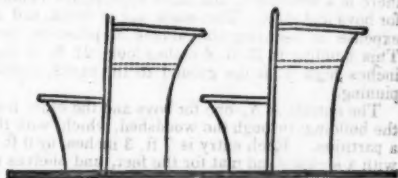


The passages D D' are 2 ft. wide, and extend round the room; E E are 15 inches, and allow of easy access to the seats and desks on either hand. F is 5 ft. 8 inches, and in the center stands an open stove C, the pipe of which goes into one of the flues, a. The temperature is regulated by a thermometer.

Each pupil is provided with a desk G, and seat H, the front of the former, constituting the back or support of the latter, which slopes  $2\frac{1}{2}$  inches in 16. The seat also inclines a little from the edge. The seats vary in height, from  $9\frac{1}{4}$  inches to 17, the youngest children occupying those nearest the platform. The desks are 2 ft. long by 18 inches wide, with a shelf beneath for books, and a groove on the back side b, (Fig. 4) to receive a slate, with which each desk is furnished by the district. The upper surface of the desk, except 3 inches of the most distant portion, slopes 1 inch in a foot, and the edge is in the same perpendicular line with the front of the seat. The level portion of the desk has a groove running along the line of the



c. Top of Desk.



Section of Seat and Desk.

slope a, (Fig. 4) so as to prevent pencils and pens from rolling off, and an opening c, (Fig. 8) to receive an inkstand, which is covered by a metallic lid.

The windows, I, three on the north and three on the south side, contain each 40 panes of 8 by 10 glass, are hung (both upper and lower sash) with weights so as to admit of being raised or lowered conveniently. The sills are three feet from the floor. Those on the south side are provided with curtains and blinds.

The proper ventilation of the room is provided for by the lowering of the upper sash, and by openings 14 inches by 18, at the floor and ceiling, into a flue, (Fig. 2.) a, which leads into the open air. These openings can be enlarged, diminished, or entirely closed by a shutter controlled by a cord.

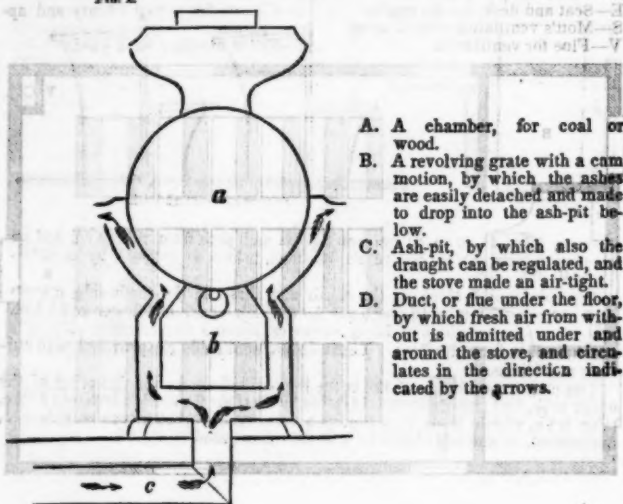
# PLAN OF SCHOOL-HOUSE IN MEADOW DISTRICT, IN BLOOMFIELD, CONN.



The new school-house in Meadow District, in the town of Bloomfield, for location, neatness, mode of seating, warming, and ventilation, is a good specimen of a cheap, convenient, and attractive edifice for a small country district. It is built of brick, and the cost, excluding the land, and including fences, appendages, and furniture, was about \$500. The style and arrangement of the seats and desks are indicated in Figs. 3 and 4. The building is 30 feet by 20. The district is indebted mainly to Hon. Francis Gillette for his zeal and determination in getting up the plan, and superintending the work.

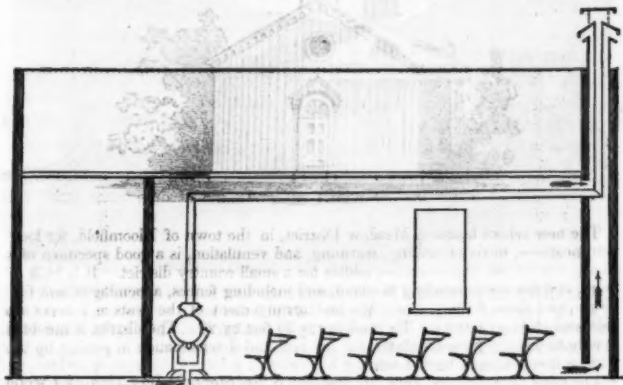
The room is heated by *Mott's Ventilating School Stove*, designed both for wood and hard coal. Fresh air is introduced from outside of the building by a flue beneath the floor, and is warmed by passing along the heated surfaces of the stove as indicated in the following section.

FIG. 2.



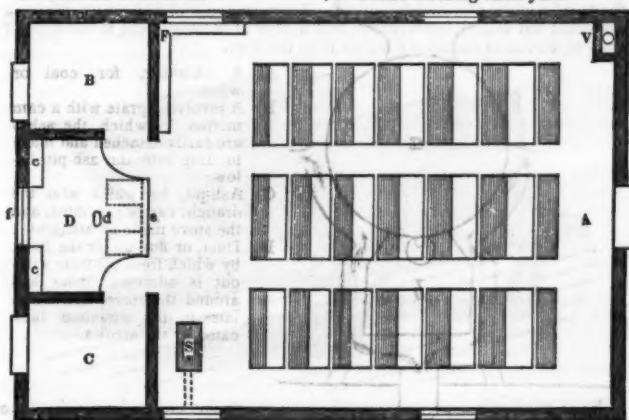
- A. A chamber, for coal or wood.
- B. A revolving grate with a cam motion, by which the ashes are easily detached and made to drop into the ash-pit below.
- C. Ash-pit, by which also the draught can be regulated, and the stove made an air-tight.
- D. Duct, or flue under the floor, by which fresh air from without is admitted under and around the stove, and circulates in the direction indicated by the arrows.

The smoke-pipe is carried in the usual way, high enough to prevent any injurious radiation of heat upon the heads of the pupils below, to the centre of the opposite end of the room, where, after passing through the ceiling, it enters the ventilating flue, which, commencing at the floor, is carried up through the attic and out above the roof, as shown in Figures 3 and 4. The heat of the smoke-pipe produces a lively upward current of the air in the upper portion of the ventilating flue, sufficient to draw off the lower stratum of air near the floor, and at the same time draw down, and diffuse equally through the room, the fresh air which is introduced and warmed by the stove at the opposite end.

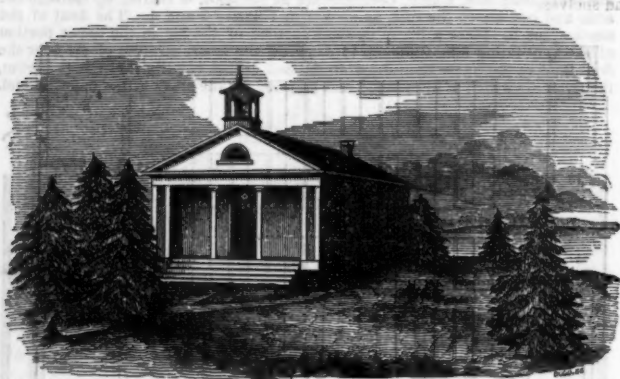


- A—Front entrance.  
 B—Girls' Entrance and lobby.  
 C—Boys' do. do.  
 D—Teachers' platform.  
 E—Seat and desk, for the pupils.  
 S—Mott's ventilating school stove.  
 V—Flue for ventilation.

- F—Seats for classes at recitation.  
 d—Teacher's desk.  
 e—Library of reference in front of teacher's desk.  
 c—Closets for school library and apparatus.  
 f—Fence dividing back yard.



# PLAN OF DISTRICT SCHOOL-HOUSE IN BARRINGTON, R. I.



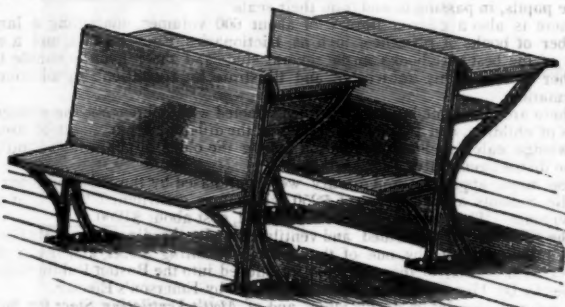
The above cut represents in perspective the new school-house in District No. 2, in the town of Barrington, Rhode Island—the most attractive, convenient, and complete structure of the kind in any agricultural district in the State—and, it is believed, in New England.

The house stands back from the highway in a lot, of an acre in extent, and commands an extensive view up and down Narraganset Bay, and of the rich cultivated fields for miles in every other direction.

The building is 40 feet long by 25 wide, and 12 feet high in the clear, and is built after working plans drawn by Mr. Telf, of Providence.

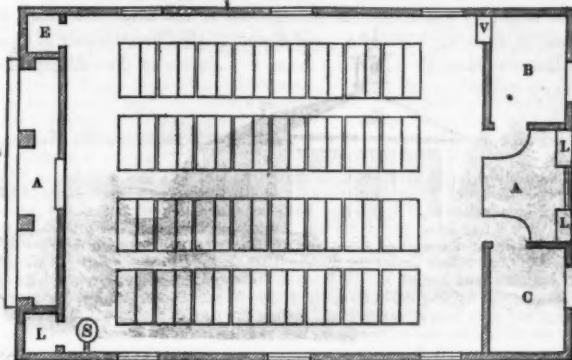
The school-room is calculated to accommodate 64 pupils, with seats and desks each for two pupils, similar to the following cut, and arranged as in Figure 3.

The end-piece, or supports, both of the desk and seat, are of cast-iron, and the wood-work is attached by screws. They are made of eight sizes, giving a seat from ten inches to seventeen, and a desk at the edge next to the scholar from seventeen to twenty-six inches from the floor.



Each pupil, when properly seated, can rest his feet on the floor without the muscle of the thigh pressing hard upon the front edge of the seat, and with a support for the muscles of the back.

The yards and entrance for the boys and girls are entirely separate, and each is appropriately fitted up with scraper, mals, broom, water-pails, sink, hooks and shelves.



A—Front entrance.

B—Girls' entrance and lobby, fitted up with mals, scrapers, hooks, shelves.

C—Boys' entrance.

D—Teacher's platform.

S—Boston Ventilating Stove.

V—Flue for ventilation surmounted, by Emerson's Ejector.

L—Cases for library.

E—Closets for apparatus, &c.

The school is well supplied with blackboards, maps, globes, and diagrams, and such other instrumentalities as are necessary and useful in the studies usually taught in a district school.

There is abundance of unoccupied space around the sides of the room and between the ranges of desks to allow of the free movements of the teacher and of the pupils, in passing to and from their seats.

There is also a district library of about 600 volumes, containing a large number of books of reference, such as Dictionaries, Encyclopedia, and a variety of the best text books in the several studies of the school, to enable the teacher to extend his knowledge, and illustrate his recitations by additional information.

There are about one hundred volumes selected with reference to the youngest class of children, and about 400 volumes in the different departments of useful knowledge, calculated for circulation among the older pupils, in the families of the district generally.

The maps, apparatus and library were purchased by the Commissioner of Public Schools at an expense of \$250, which was contributed by five or six individuals. The building, furniture and land, cost about \$1200.

The school-room is warmed and ventilated under the direction of Mr. Gardner Chilson, Boston, by one of the *Boston Ventilating Stoves*, and by a flue constructed similar to those recently introduced into the Boston Public School houses by Dr. Henry G. Clark, and surmounted by Emerson's Ejector.

A cut and description of this stove, and of *Mott's Ventilating Stove* for burning wood as well as coal, is given on the next page.

The flue for ventilation is carried up in the partition wall, and is constructed of well seasoned boards, planed smooth on the inside.

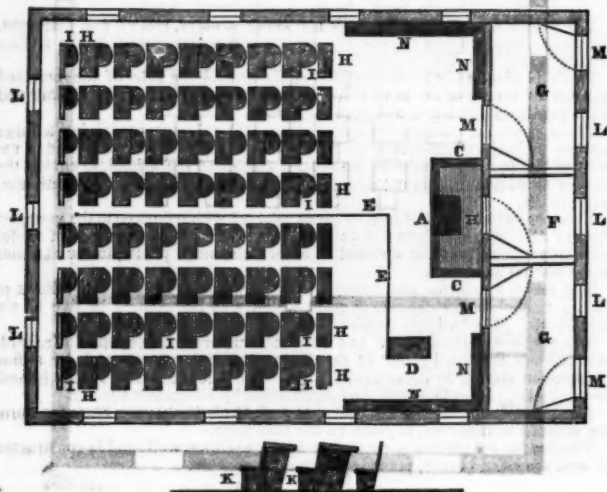
### PLANS OF SCHOOL-HOUSES RECENTLY ERECTED IN NEW HAMPSHIRE.

The following plans, and the descriptions of the same, are taken, by permission, from the "*Third Annual Report of the Commissioner of Common Schools* (Hon. R. S. RUST,) to the Legislature of New Hampshire, January, 1849."

#### PLAN OF DISTRICT SCHOOL-HOUSE IN DUBLIN, N. H.

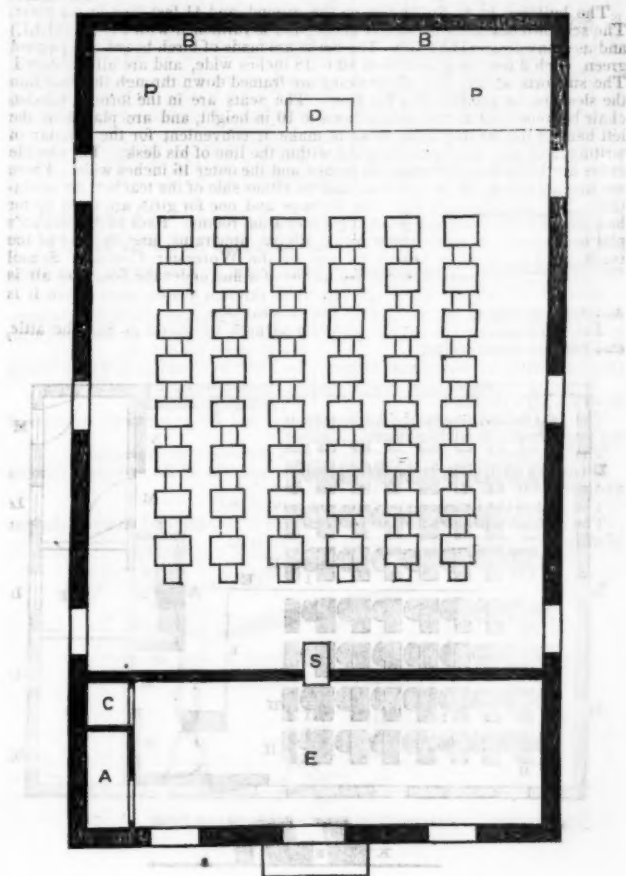
The building is 42 by 33 feet on the ground, and 11 feet high in the clear. The school-room of 29 by 35 feet inside, and is furnished with 64 seats (I,I,I.) and as many desks (H,H,H.) The desks are made of birch board, and painted green, each 2 feet long and from 10 to 18 inches wide, and are all numbered. The supports at the end of the desks are framed down through the floor into the sleepers, or joints under the floor. The seats are in the form of wooden chair bottoms, and are 16 inches down to 10 in height, and are placed at the left hand of the writing desk, so as to make it convenient for the scholar in writing, and give him space to stand within the line of his desk. The outside aisles are 18 inches, the center 24 inches, and the outer 16 inches wide. There are movable seats (N,N,) in front, and on either side of the teacher, for recitation. The entrances (G,G,) one for boys and one for girls, are fitted up for hats, bonnets, &c., and can be used for recitation rooms. Back of the teacher's platform (A,) is a small room for a library, apparatus, and the use of the teacher. The room is heated by one of the Worcester Common School Stoves, which cost about \$18. By means of a flue under the floor, the air is introduced beneath the stove, and circulates through heated tubes before it is admitted into the room, on the principle of a furnace.

The ventilation of the room is partially secured by openings into the attic, and hence into the open air.



## PLAN OF DISTRICT SCHOOL-HOUSE IN GREENLAND, N. H.

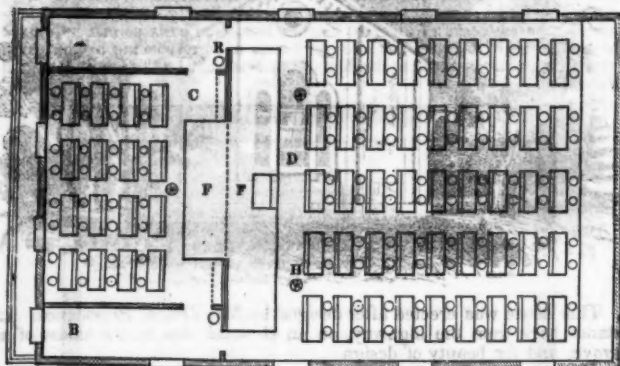
The building is 50 feet long by 30 feet wide, and 12 feet high in the clear. It is built of brick. A large entry (E), is partitioned off from the school-room, and fitted up not only to receive the hats, bonnets, &c., of the pupils, but to accommodate all the pupils in rainy weather during recess, as well as those who reside at a distance, when they arrive at the school-house before the school-room is opened, and those who may be obliged to stay during recess. The entry and the school-room is heated by a large stove (S) placed in the partition. The teacher's platform (P) is placed at the end of the school-room, and is raised one step above the floor. Back of the teacher, along the wall, are cases (B) for apparatus, and a well-selected library of 200 vols. There are 48 separate desks of different heights, framed on posts permanently fixed to the timbers of the floor, and fitted with seats of corresponding heights set in cast iron frames secured to the floor; both seats and desks are stained and varnished.





# **PLAN OF SCHOOL-HOUSE AT WASHINGTON VILLAGE IN COVENTRY, R. I.**

The following cut presents the ground plan of the new school-house in the village of Washington, in the town of Coventry, R. I. The location is on the high ground in the rear of the village, and commands an extensive prospect in every direction. The site and yard, occupying one acre, was given to the district by Governor Whipple. The whole structure, without and within, is an ornament to the village, and ranks among the best school-houses in Rhode Island.



A—Boy's entrance.

B—Girl's entrance.

C—Primary school-room.

D—Secondary, or Grammar Department.

E—Teacher's platform.

The two school-rooms can be thrown into one, for any general exercise of the two schools, by sliding doors.

The two rooms are uniformly heated by a furnace in the basement.

There is a well, sink, basin, mats, scrapers, bell, and all the necessary fixtures and appendages of a school-house of the first class.

The cost of the building and furniture was \$2,300.

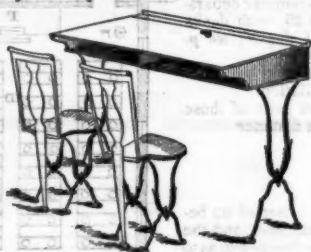
The district possesses a library of upwards of four hundred volumes, the cost of which was raised by subscription in the District.

F—Desks for two, with iron end-piece.

G—Chairs supported on iron pedestal.

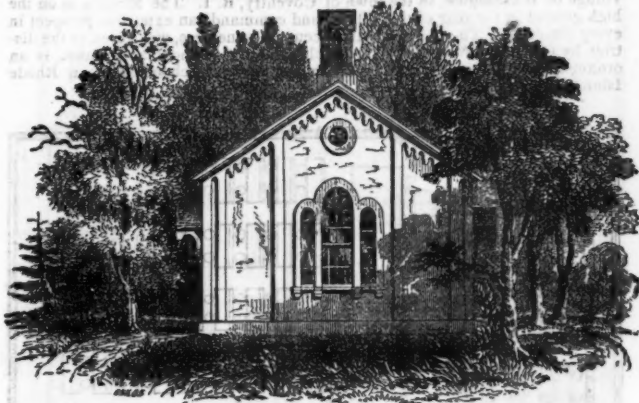
H—Register for hot air.

R—Flue for ventilation, within which is carried up the smoke-pipe.



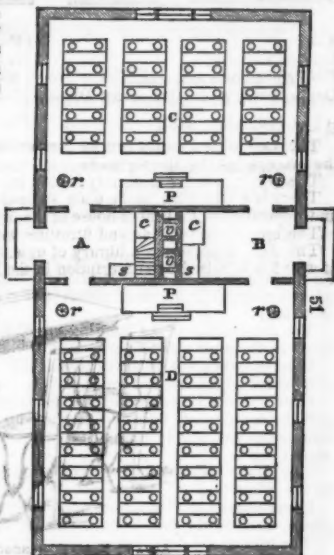
ALBANY NORMAL SCHOOL CHAIR AND DESK.

# PLAN AND DESCRIPTION OF DISTRICT SCHOOL-HOUSE IN CENTREMILL, NORTH PROVIDENCE, R. I.



This house was erected after designs by Mr. Test, of Providence. It stands back from the highway, on an elevated site, in the midst of a grove, and for beauty of design and convenience of arrangement, is not surpassed by any similar structure in New England. It is 26 feet by 51, and 13 feet high in the clear, with two departments on the same floor.

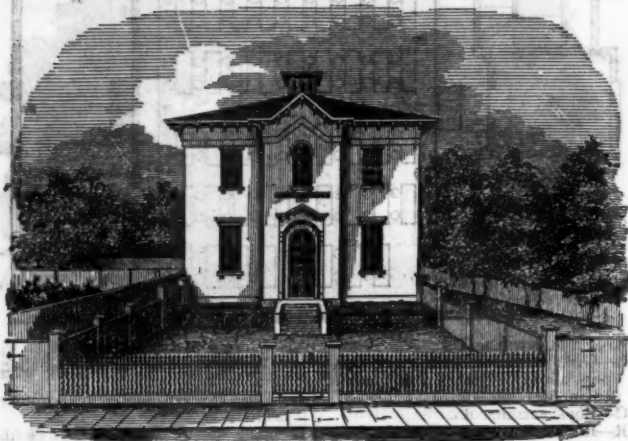
- A, Boys' entry, 6 feet by 10.
- B, Girls' ditto.
- C, Primary department, 20 feet by 25, with desks and seats attached for 70 pupils.
- D, Secondary, or Grammar department, 25 feet by 25, with desks and chairs for 64 pupils; see p. 120.
- r, Register for hot air.
- v, Flues for ventilation.
- c, Closets for dinner pails of those who come from a distance
- s, Sink.



The smoke pipe is carried up between the ventilating flues, and the top of the chimney is finished so as to accommodate the bell.

## PUBLIC SCHOOL-HOUSE IN WARREN, R. I.

Fig. 1.



THE above cut exhibits a front view of the Public School-house erected in the village of Warren, at the expense of the town, in 1847-48, after drawings made by Mr. Telf, of Providence, under the directions of a committee of the town, who consulted with the Commissioner of Public Schools, and visited Providence, Boston, Salem, Newburyport and other places, in order to ascertain the latest improvements in school architecture, before deciding on the details of the plan.

The lot is 225 deep and 100 feet wide for a depth of 125 feet, and 161 feet wide for the remaining 64 feet. It is divided into three yards, as exhibited in the ground plan, (Fig. 2,) each substantially inclosed, and planted with trees and shrubbery.

The dimensions of the building are 63 feet by 44 on the ground. It is built of brick in the most workmanlike manner.

Most of the details of construction, and of the arrangement in the interior, are similar to those described on page 214.

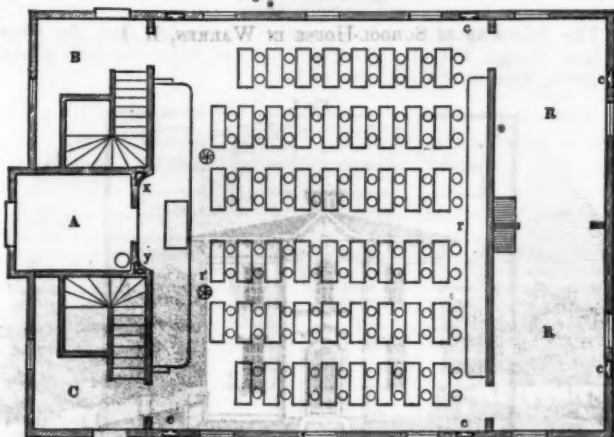
Each room is ventilated by openings controlled by registers, both at the floor and the ceiling, into four flues carried up in the wall, and by a large flue constructed of thoroughly seasoned boards, smooth on the inside, in the partition wall, (Fig. 3, x.)

The whole building is uniformly warmed by two of Culver's furnaces placed in the cellar.

Every means of cleanliness are provided, such as scrapers, mats, sink with pump, wash basin, towels, hooks for outer garments, umbrella stands, &c.

The tops of the desks are covered with cloth, and the aisles are to be cheaply carpeted, so as to diminish, if not entirely prevent, the noise which the moving of slates and books, and the passing to and fro, occasion in a school-room.

Fig. 3.—FIRST FLOOR.



A—Front entrance.

B—Girls' entrance, with mats, scrapers, hooks for clothes, a sink, pump, basin, &amp;c.

C—Boys' entrance do.

R—Recitation rooms, connected by sliding doors.

R, P—Platform for recitation, with a blackboard in the rear.

T—Teacher's platform.

S—Seats and desks; see page 205.

Q—Library and apparatus.

w—Windows, with inside Venetian blinds.

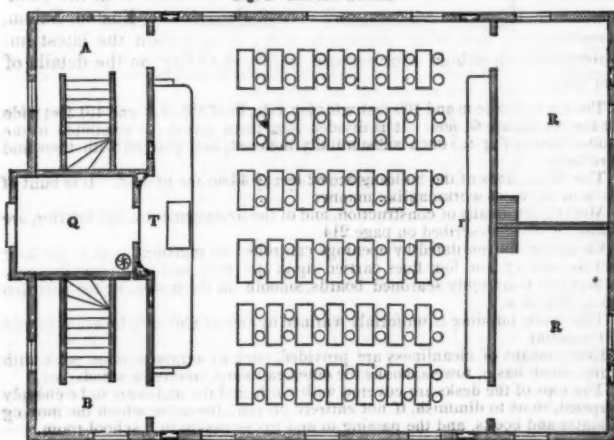
c—Flues for ventilation in the outer wall.

x—Flue for ventilation, lined with smooth, well seasoned boards.

y—Bell-rope, accessible to the teacher by an opening in the wall.

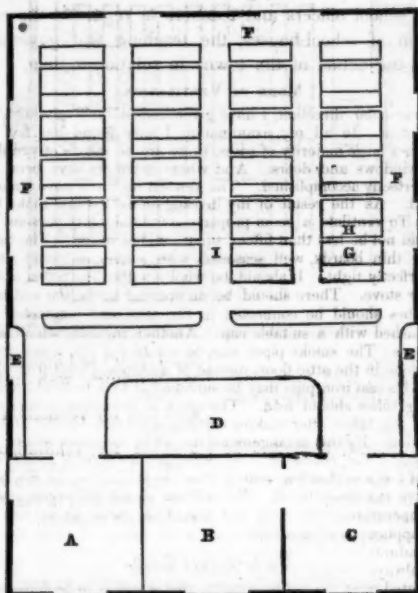
r—Hot air registers.

Fig. 4.—SECOND FLOOR.



**PLAN OF DISTRICT SCHOOL-ROOM, RECOMMENDED BY DR. A. D. LORD,  
COLUMBUS, OHIO.**

The following plan and description are copied from the Ohio School Journal, Vol. II., edited by Dr. Lord, Superintendent of the Common Schools of Columbus, Ohio.



The building here presented should be 26 by 36 feet on the ground, or, at least, 25 by 35 feet inside. The plan is drawn on a scale of ten feet to the inch.

A C—Entries 8 feet square, one for each sex.

B—Library and apparatus room, 8 by 9 feet, which may be used for a recitation room for small sized classes.

D—Teacher's platform, behind which, on the wall, should be a blackboard 12 feet long by 5 feet wide.

E E E E—Recitation seats, those on the sides placed against the wall, those in front of the platform having backs and being movable.

F F F—Free space, at least two feet wide, next the wall on three sides of the room.

G—Desk, for two pupils, four feet long by 18 inches wide.

H—Seat, " " " " 13 " "

I—Centre aisle two feet wide; the aisles on either side of this should be from 18 to 24 inches wide.

The area on either side and in front of the Teacher's platform, is intended for reading and spelling classes, and any other class exercises in which the pupils stand; and the space next the wall may be used to arrange the greater part of the school as one class in any general exercises requiring it.

Four windows are represented on each side of the house, and two on the end opposite the Teacher's stand. The door to the Library-room opens from one of the entries, and the room is lighted by a large window in the front end of the house.

**PLANS FOR RURAL TOWNS AND VILLAGES, RECOMMENDED BY THE  
MASSACHUSETTS BOARD OF EDUCATION.**

The following Plans were prepared by Mr. Leach, one of the agents employed by the Board of Education in Massachusetts to co-operate with their Secretary in visiting schools in different towns, and in conferring with school officers and teachers in regard to the construction and condition of school-houses, the teaching and governing of the schools, and the action of the towns in relation to them.

**MODE OF VENTILATION.**

By your particular direction, I have given considerable attention to the subject of ventilation. In all my examination, I have found but few houses well ventilated. In a large majority of cases, there are no means of ventilating but by opening the windows and doors. And where attempts have been made, it has been but imperfectly accomplished. The ventilating tubes have almost invariably been too small. As the result of my investigations, I would make the following suggestions. To ventilate a room properly containing fifty persons, the ventilating tube should not be less than fifteen square inches inside. The tube should be made of very thin boards, well seasoned, with a smooth inside surface, and it should be perfectly tight. It should be wholly within the room, and opposite to the register or stove. There should be an opening at the top and bottom. The ventilating tubes should be connected in the attic, and conducted through the roof, and furnished with a suitable cap. Another method, which is far preferable, is as follows: The smoke pipes may be conducted into a cast iron pipe resting on soap-stone in the attic floor, instead of a chimney built from the bottom of the cellar. This cast iron pipe may be surrounded by a brick chimney into which the ventilating tubes should lead. The space in the chimney should be equal to the spaces in the tubes, after making suitable allowance for the pipe, and the increase of friction. By this arrangement, the air in the tubes will be rarefied, and a rapid current of air produced. All attempts to ventilate rooms with tubes in the wall, or of less size than fourteen or fifteen square inches for fifty persons, have, so far as I have examined, failed. No artificial means will secure good ventilation when the temperature of the room and that of the outer air are nearly the same, without the application of heat to the air in the tubes. Unless the air is heated before being admitted into the room, it should be let in at the top, and not at the bottom, and always through a large number of small apertures. The quantity of pure air admitted must always be equal to that which is to be forced out.

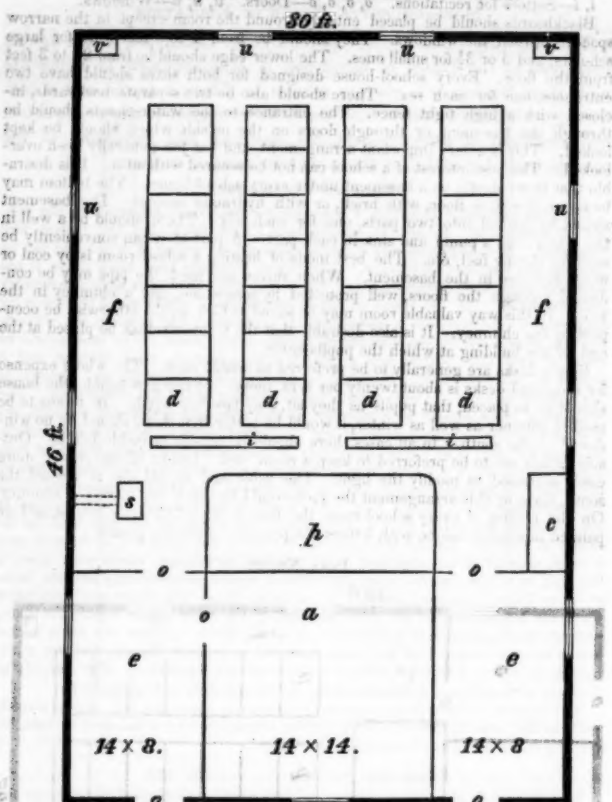
The expense of introducing a proper ventilating apparatus into houses already built in the country towns, will vary from twenty-five to a hundred dollars, according to the size and character of the house.

**DIRECTIONS FOR MAKING BLACKBOARDS.**

To 100 pounds of common mortar, add 25 pounds of calcined plaster; to this add twelve papers, of the largest size, of lampblack. This is to be put on as a skim coat, one sixth of an inch thick to rough plastering, and should be made as smooth as possible by hard rubbing. It may also be put on to old plastering, after it has been thoroughly raked and prepared. This should be covered with a coat of paint, made in the following manner: To one quart of spirits, add one gill of boiled oil. To this add one of the largest papers of lampblack, after it has been thoroughly mixed with spirits. To this add one pound of the finest flour of emery. This paint may also be put on boards or canvas. This should be constantly stirred, when used, to prevent the emery from settling. If too much oil, or if any varnish be used, the board will become more or less glazed and unfit for use. Some prefer to have the board behind the teacher green or bronze, which is more grateful to the eye. This can be done by using chrome green instead of lampblack. None but the very finest flour of emery should be used. Some prefer pulverized pumice-stone to emery.

**NOTE.**—All the Plans are drawn on a scale of ten feet to an inch, with the exception of Numbers 9 and 10, which are drawn on a scale of twelve feet to an inch.

## PLAN No. 1, FOR RURAL OR VILLAGE SCHOOL-HOUSE.



This plan represents the ground floor of a school-house one story high, 46 by 30 feet on the inside.

*e, e*—Entries, one for each sex, 14 by 8 feet. *a*—Anteroom, 14 by 14 feet. This may be used as an assembly-room for the pupils before school and at noon, or for a recitation-room and library. Where it is practicable, there should be separate rooms for the pupils to assemble in. This can usually be provided in the basement at a small expense. *p*—Teacher's platform, 14 feet long and 6 feet wide, and 7 or eight inches high. Behind the teacher's desk there should always be a blackboard the whole length of the platform, from 4 to 5 feet wide, the lower edge of which should be 3½ feet from the top of the platform. *f, f*—Aisles. The inner aisles should be from 16 to 18 inches wide. The outer aisles from 36 to 48 inches. *d, d, d, d*—Seats for two pupils each. The desks should be from 40 to 48 inches long; and the desks and seats should be from 30 to 36 inches wide, and adapted in height, to the age of the pupils. *c*—Closet for maps, books of reference, &c. *s*—Stove. The dotted lines square, 10 inches square, to admit pure air. *v, v*—Ventilating tubes, 12 by 10 inches each. They should be placed within the room, and made of thin boards, perfectly tight, and smooth on the inside. They should be united in the attic, and lead through the roof.

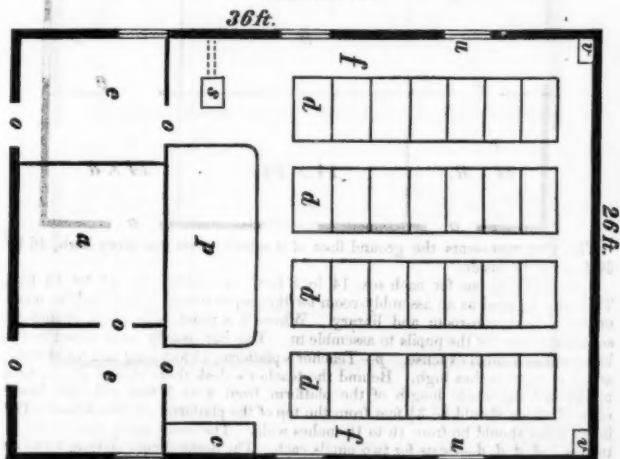


i, i—Settees for recitations. o, o, o—Doors. u, u, u—Windows.

Blackboards should be placed entirely around the room except in the narrow spaces between the windows. They should be from 4 to 5 feet wide for large scholars, and 3 or  $3\frac{1}{2}$  for small ones. The lower edge should be from 2 $\frac{1}{2}$  to 3 feet from the floor. Every school-house designed for both sexes should have two entrances, one for each sex. There should also be two separate backyards, inclosed with a high tight fence. The entrance to the water-closets should be through the basement, or through doors on the outside which should be kept locked. This is a very important arrangement, and has too generally been overlooked. The best interest of a school can not be secured without it. It is desirable that there should be a basement under every school-house. The bottom may be covered with a floor, with brick, or with hydraulic cement. The basement should be divided into two parts, one for each sex. There should be a well in the center, and a pump and sink in each part. A part of it can conveniently be used for storing fuel, &c. The best mode of heating a school-room is by coal or wood furnaces in the basement. When stoves are used, the pipe may be conducted through the floors, well protected by soap-stone, into a chimney in the attic. In this way valuable room may be saved, which would otherwise be occupied by the chimney. It is also desirable that the teacher's desk be placed at the end of the building at which the pupils enter.

Single desks are generally to be preferred to double ones. The whole expense for room and desks is about twenty per cent. more. When practicable, the house should be so placed, that pupils as they sit, may face the north. In rooms to be used in summer as well as winter, it would be better that there should be no windows\* on the south. In all cases there should be outside or inside blinds. Outside blinds are to be preferred to keep a room cool. Inside blinds can be more easily managed to modify the light. The gable end should also be toward the south, since by this arrangement the roofs would be much less heated in summer. On the ceiling of every school-room the four points of the compass should be painted in distinct colors, with letters designating the several points.

PLAN NO. 2.

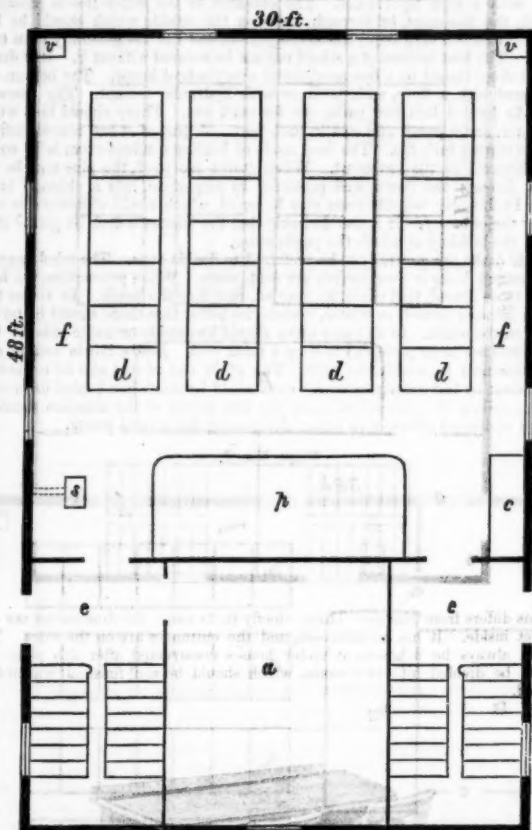


This plan is essentially the same as the preceding one, excepting in size. It is 36 by 26 feet inside. This can be adopted when it is desirable to sacrifice convenience for economy. It will be perceived that the outer aisles are much narrower

\* It will be better to provide curtains and shutters to modify, rather than a blank wall to exclude altogether the cheerful sunlight.—H. B.

than those in the Plan Number One. Wide aisles are much more convenient for scholars to stand in during recitations, and to work at the blackboard without being annoyed by others passing them. It is also important that the aisles be wide enough to accommodate settees on days of examination, &c.

PLAN No. 3.

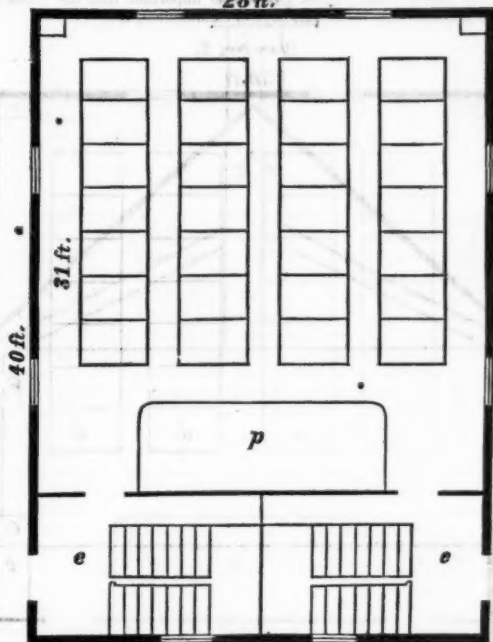


This represents the ground floor of a building two stories high. It is 48 by 30 feet inside. The description of Plan Number One will apply to this, with the exception of the entries.

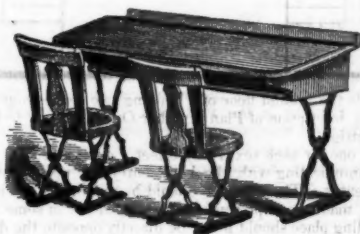
*e, e*—Entries, one for each sex, 16 by 8 feet. *a*—Anteroom. The one on the lower floor communicating with the boys' entry, the upper one communicating with the girls' entry. There never should be winding stairs in a school-house. They should be made as represented on the plan, or in some form with broad steps. The landing place should never be directly opposite the door. The rooms should be from 11 to 13 feet in height. In large schools the outside door should swing outward, to enable the pupils to rush out easily in case of an alarm.

PLAN No. 4.

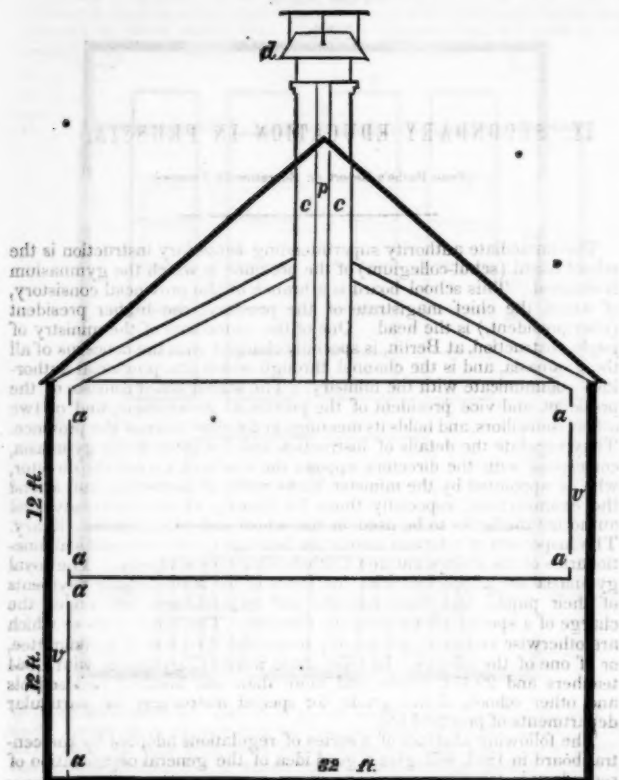
28 ft.



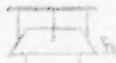
This differs from Number Three chiefly in its size. Its dimensions are 40 by 28 feet inside. It has no anteroom, and the entrances are on the sides. There should always be a basement under houses constructed after this plan. This should be divided into two rooms, which should be well finished, warmed, and lighted.



## PLAN OF VENTILATION.



**v, v**—Ventiducts or ventilating tubes. These should be at least 14 inches square for a room containing 50 scholars. **a, a**—Apertures into the ventiducts **p**—Cast iron smoke flue, resting on soapstone in the attic floor. **c, c**—Chimney surrounding the smoke flue. This should contain as many square inches as the ventiducts leading into it, after deducting the space occupied by the flue. The inside of the chimney should be circular, and plastered perfectly smooth. This mode of ventilating is applicable to any method of heating, either by stoves or by furnaces. The heat of the smoke flue will rarefy the air in the chimney, and produce a strong draught in the ventiducts. This is regarded as the most effective, and, at the same time, the most economical mode of ventilation. The lower aperture should always be kept open. The upper aperture should be closed, excepting near the close of the morning and afternoon session, when it should be opened. It has been ascertained, by repeated experiments, that carbonic gas diffuses itself rapidly into every part of the room. In a room of 50 scholars, from 200 to 500 cubic feet of air are vitiated every minute, and unless some effectual means are devised for expelling the impure air, the most serious consequences must ensue.



## IX. SECONDARY EDUCATION IN PRUSSIA.

[From Bache's Report on Education in Europe.]

The immediate authority superintending secondary instruction is the school board (*schol-collegium*) of the province in which the gymnasium is situated. This school board is a branch of the provincial consistory, of which the chief magistrate of the province, the higher president (*ober-president*), is the head. One of the councillors of the ministry of public instruction, at Berlin, is specially charged with the concerns of all the gymnasia, and is the channel through which the provincial authorities communicate with the ministry. The school board consists of the president and vice president of the provincial government, and of two school councillors, and holds its meetings in the chief town of the province. They regulate the details of instruction and discipline in the gymnasia, correspond with the directors, appoint the teachers, except the director, who is appointed by the minister, make visits of inspection, and attend the examinations, especially those for passing to the university, and authorize the books to be used in the school and placed in the library. The inspection of religious instruction belongs to the ecclesiastical functionaries of the Protestant and Catholic churches severally. The royal gymnasia are supported from the funds of the state and the payments of their pupils, and their receipts and expenditures, are under the charge of a special officer, or of the director. The funds of those which are otherwise endowed, are usually under the direction of a committee, or of one of the officers. In 1850, there were 117 gymnasia with 1,664 teachers and 29,474 pupils, and more than one hundred real schools and other schools of this grade, for special instruction for particular departments of practical life.

The following abstract of a series of regulations adopted by the central board in 1837, will give a good idea of the general organization of secondary instruction.

The regulations embrace the following heads: 1. Admission of pupils. 2. Subjects of instruction. 3. Distribution of teachers and of the subjects of the lessons. 4. The number of hours of teaching. 5. Studies out of school hours. 6. Duration of the courses. 7. Remarks on the regulations for the examinations. 8. Remarks on the supposed defects of teachers, methods of instruction, &c. 9. Physical education. 10. Religious instruction. The following is an abstract of the remarks upon these subjects.

1. *Admission.* Experience has fully proved that the admission of pupils at a very early age into the gymnasium is prejudicial to the individuals themselves, as well as to the institutions. Neither the mental nor physical development, nor the attainment, at an early age, are adequate to the pursuit of the courses appropriate to a gymnasium, and hence the admission of very young pupils induces an improper lower

ing of the standard of instruction in these establishments. The ministry, therefore, recommends that pupils be not admitted at an earlier age than ten years, and that the following qualifications be required: 1. Facility in logical and rhythmical reading, both in German and Roman text, and the rudiments of grammar and orthographic writing. 2. Writing from dictation. 3. Practice in the four ground rules of arithmetic, with abstract numbers, and first principles of fractions. 4. Elements of geography, particularly that of Europe. 5. Stories of the Old Testament, and life of Christ. 6. Elementary notions of drawing and of form.

Two errors on the part of parents are pointed out by the ministry, the influence of whose advice is directed against them: The first is, that children of feeble bodily constitutions should be devoted to literary pursuits; the second, that young men who have passed the appropriate age for instruction may be advantageously pushed into one of the learned professions, even if they are required to teach in order to obtain the needful education.

2. *Subjects of instruction.* As the ground work of higher instruction, the following subjects are recommended to be pursued in the gymnasia: 1. Religious instruction. 2. German. 3. Latin. 4. Greek. 5. Mathematics. 6. Physics. 7. Natural history. 8. Geography. 9. History. 10. Writing. 11. Drawing. 12. Vocal music. Experience has shown that these subjects are particularly calculated to develop the intellectual powers, and to give a systematic and practical preparation for the higher studies. The same can not be said of the Hebrew, the study of which is specially appropriate only to theologians. A knowledge of the French is not considered essential to the true purpose of a gymnasium. This language has been made a subject of public instruction on account of its usefulness in after-life, and not of its correctness or purity. With the exception of these two languages, the subjects enumerated above have always been taught in the gymnasia, though in variable proportions. No one of them could, with propriety, be omitted, and propositions to that effect will receive no countenance. The ministry does not fear that injury will result to the mental or physical development of the pupils, by pursuing all the branches in their appropriate degree, but teachers are cautioned against attempts to push one subject at the expense of another; being reminded that the course should be viewed as a whole, which must suffer by the unequal forcing of its parts. The directors of gymnasia are especially required to attend to this point, and the school boards are requested to relieve them from teaching, as far as may be necessary to the inspection thus required.

If the subjects of instruction, as here laid down, be compared with those of the secondary schools of England, it will be found that what is there regarded as innovation, has been successfully used as the course of grammar school instruction in Germany. That the efficiency of the course is confirmed by long experience, and that the subjects are recommended, anew, as the future course of those institutions. While ancient letters are successfully cultivated, other subjects are not neglected, but their equal importance with the former is clearly asserted, and as clearly proved by results. While the Germans have lost nothing in general literary culture by this system, they have gained much in other departments of knowledge.

The scholastic year is divided into two terms, or half years, at the close of each of which there is an examination. At the end of the second half year, the examinations for passing from one class to another are held. The usual vacations are two weeks at Easter, one at Whitsuntide, three in August, one at Michaelmas, and two at Christmas.

3. *Distribution of the teachers and of the subjects of instruction.* There are, in general, six classes in a gymnasium, of which the lowest is called sixth, and the highest first. To produce a harmony in the methods and degree of instruction, notwithstanding the variety of subjects taught, it has, for some time, been the custom in the Prussian gymnasia to assign several subjects of instruction to the same teacher, in the same class. This arrangement is confirmed in the document under discussion. It is recommended that similar subjects of instruction be classed together, to constitute a department, as, for example, German and Latin; history, geography, and natural history; and mathematics, and physics. That then the instruction of one or more classes, in one department, be consigned to one teacher; as the instruction of the lower classes in German and Latin; of the two middle classes in Latin, Greek, and French; of the two higher in German, Greek, and French; of the lower and middle classes in history and geography; of the higher classes in mathematics, physics, and mental philosophy. The number of teachers would thus be, in general, in a gymnasium of six classes, two for the two lower classes, three for the two middle, and four for the two higher classes.

The ministry further recommend that kindred subjects be taught in different parts of the same term, rather than on different days of the same week, as geography at the beginning of a term, and history at the close; a Latin and Greek prose author at the beginning of a term, and a poetical author at the close of the term, &c.

With a view to induce teachers to take upon themselves the arduous duties of a department, or class teacher, as just explained, the school board are recommended to promote teachers according to merit, not confining their promotion to the institution in which they may be, but taking the entire range of the province. A promise is made by the ministry to pay strict attention to this rule, in promoting to vacant situations of directors of gymnasia. The class teachers are to have the title of "upper teachers," (*ober-lehrer*), the others being designated simply as "teachers."

It is obvious that very varied attainments are thus required of the regular, or class teachers, and that the difficulty of finding persons competent to discharge these duties, increases very much as the grade of instruction becomes more elevated. Hence the practice in the gymnasia varies very materially from this recommendation. It is so desirable, in the higher classes, that the teacher should devote much time to his own improvement in the knowledge of his branch of instruction, and that he should have a strong taste for its cultivation, that in general it is found advisable to confine his attention to a single subject, or to subjects much nearer akin than those which are classed together in the enumeration just made. This is particularly the case in the mathematics, beyond the mere elements, the physics and physical geography, the natural history, the less elementary parts of drawing, and vocal music. In the case of the French language, a special teacher, from the very beginning, is absolutely necessary, if the instruction in it is to be any thing more than a matter of form.

4. *Number of hours of recitation.* This is fixed at thirty-two per week; a number which experience has shown may with propriety be exacted of students, and which is requisite to complete the course of studies. In the French colleges there are but twenty-four hours of regular obligatory instruction per week. This difference alone would go far to explain the reason for the fact, that in the gymnasia, the written course of studies is closely followed in all its departments, while in the royal colleges it is but partially carried out. That in the former, all branches



are deemed worthy of attention, while in the latter, in practice, some are treated as if they were not appropriate parts of a regular course of studies. The Prussian minister asserts, very justly, that four hours every morning, and two hours in the afternoon, four times a week, may be passed in a well ventilated school room, without injury to health. The condition in regard to ventilation is, however, essential to the truth of the proposition; it is easily realized in the gymnasia, on account of the small number constituting each class. I found, in fact, generally, but little objection to the arrangements, in this respect, in these institutions.

I had reason to remark, in the city gymnasia of Prussia, in general, that the appearance of the upper classes betokened a higher state of health than that of the lower, which would not have been the case had they been over worked. The mental labor, on the part of the student, indicated by thirty-two hours per week spent in school, is less than it would be from the same time in an English grammar school, or in one of our own establishments of the same grade, from the mode of teaching. Much of the instruction is communicated by conversation and by lecture, during the school hours, which are thus devoted to acquiring knowledge as well as to reciting what has been learned by study at other times. The school boards are requested not to allow this time of thirty-two hours per week to be exceeded, and a general plan for the distribution of time, which will be given below, is appended to the instructions. This plan, however, may be modified according to the circumstances of the institution to which it is to be adapted, preserving, however, the number of hours devoted to religious instruction, to the languages and mathematics, as cardinal points in the system. It is deemed unnecessary to begin the French earlier than in the third class, which would postpone it as late as thirteen years of age. Natural history may be substituted for physics in the second class, and a general

PLAN OF STUDIES ARRANGED FOR THE GYMNASIA OF PRUSSIA BY THE MINISTRY OF PUBLIC INSTRUCTION, OCTOBER 24TH, 1837.

SUBJECTS OF STUDY, &c.	NUMBER OF HOURS PER WEEK.						
	Prima or highest class.	Secunda.	Tertia.	Quarta.	Quinta.	Sexta.	Total.
Latin, .....	8	10	10	10	10	10	58
Greek, .....	6	6	6	6			24
German, .....	12	12	12	2	4	4	16
French, .....	12	12	12				6
Religious Instruction, .....	4	4	4	2	2	2	12
Mathematics, .....		4	4	3			14
Arithmetic and Elements of Form, ...					4	4	8
Physics, .....			1				3
Philosophy, .....							2
History and Geography, .....		3	3	2	3	3	16
Natural History, .....			2	2	2	2	8
Drawing, .....				2	2	2	6
Writing, .....				1	3	3	7
Vocal Music, .....			2	2	2	2	8
	30	30	32	32	32	32	
Hebrew for the future Theologians, ...	2	2					

review of that branch, as studied in the previous years, is recommended. Drawing and vocal music are intended to be carried so far as that the pupil may follow them to advantage if his tastes incline that way.

The ministry recommends that where several hours per week are devoted to a subject, more than one each day should be given to it, so as to concentrate the attention upon a few branches every day.

5. *Study out of school hours.* On this subject the ministry remarks, that while it is highly important that the pupil should have preparation to make, requiring the exercise of his own resources, it is not less so that the amount of private study should not be carried to an injurious extent. The regulations, therefore, provide that at the beginning of each term there shall be a conference of the teachers, to determine the due amount of such work in the different classes, in detail. Every teacher should keep a book, in which the exercises actually given are accurately noted, so that the director may see at any time how far the decisions of the conference have been conformed to. The written exercises of the pupils must be regularly corrected by the teachers, and at least once a month they must review the exercise books, to ascertain the progress and the propriety of the exercises. German and Latin compositions are to be especially attended to. Themes on subjects with which the pupils are not acquainted, so that they must labor both for the matter and language, are forbidden. The teacher should not only select subjects known to the pupils for these exercises, but should also explain the manner in which he expects them to be treated.

6. *Duration of the courses.* The six classes should, according to rule, be passed through in nine years: the three lower, each, in one year, and the three higher, each, in two years; thus a pupil entering at ten would leave the gymnasium at nineteen. The provincial school board may determine the period of the year for the examinations for passing from class to class. In the gymnasia, where the classes are subdivided on account of numbers, and the pupils pass from one section to another at the end of six months, the arrangement is permitted to be continued.

Superior excellence in a few departments is not to warrant the promotion of the pupil to a higher class; he must be reasonably proficient in all.

7. *Examination for the university.* The regulations of 1834, on this subject, are confirmed by the present; certain erroneous constructions, which have been put upon the former, being pointed out. The first of these is, the supposition that the amount which the pupils are able to go over, during the time fixed for examination, determines the character of their certificate of capacity, while, on the contrary, this is given for the general knowledge of the subjects which they show. The fact that this examination requires a previous attendance of two years in the first class, is considered as indicating positively that the course of that class can not be intended to drill for the examination. The next refers to the specific direction in regard to the extent of examination on the different subjects, which being intended as a general guide to the examiners, has been misconstrued so far as to be supposed to furnish teachers who are preparing pupils the means of imparting the least amount of knowledge consistent with their passing. The ministry considers that the qualifications for the final examination have stood the test of experience, having been found not too high, and calculated to promote sound instruction and not hasty preparation. As, however, the excitement of these examinations appears to act injuriously on certain temperaments, the ministry authorizes the examining commissions to reduce the viva voce parts of the examination, in cases where they see cause to do so. The

ministry declines omitting the examination on the course of religious instruction.

8. *Supposed defects of teachers, &c.* The ministry states, as the remark of many intelligent persons, that while so much progress has been made within the last twenty years in the elementary schools, many of the teachers of the gymnasia, neglecting the progress of the science of teaching, still follow the old routine methods; that the teachers overrate the importance of their special branches, and thus destroy the harmony of the system; that they imitate the style of lecturing of the university professors, which renders their explanations ill adapted to the age and state of progress of their pupils, and when, in consequence, their pupils get on slowly, instead of seeing in this fact the necessity for a change of method, they charge the fault upon the classes. The ministry remarks that it has not the means of judging personally whether such criticisms are well founded or not, but that the provincial school boards, to whom they have been submitted, are of opinion that, in general, they are too severe. They are made public, however, that the teachers of the gymnasia may reflect upon them.

No specific method of instruction, it is remarked, applicable to all varieties of age, preparation, and subjects of study, can be pointed out. Every teacher should observe, closely, the results of his instruction, and adopt freely the advice or example of teachers of known ability in their art. The directors of gymnasia are especially enjoined to visit the classes of their teachers frequently, and to make such suggestions as may seem to be required; they are further expected to set an example themselves of thorough teaching. The ministry considers that the system of class teachers, already described, facilitates the course of observation recommended, by giving the teacher a thorough acquaintance with all the members of his class. The importance of making the science of teaching one of observation is thus directly inculcated.

The probation of a year, required by the decree of September 26th, 1836, before the admission of a teacher to full standing, being intended to prevent the admission of incompetent teachers, the provincial school boards are enjoined to give effect to the provision, by promoting to the situations of ordinary or class teachers (*ordinarii*), those only who have shown a decided capability in their art. The ministry promises to give such an extension to the normal schools for teachers of gymnasia, as shall insure an adequate supply from them.

The provincial boards are enjoined to see that suitable books are provided for the gymnasia, and to attend to regulating the details of the programmes of the different classes. This authority obviously leaves the most essential points of instruction within their power.

9. *Physical education.* On this subject, the document from the ministry states that representations have been made from many of the directors and teachers of gymnasia, that physical education should be introduced as an essential part of their systems. The necessity for due physical development is admitted; but it is argued, that in the gymnasia which receive day scholars alone, an attention to it forms no part of the duty of the teacher, who is merely bound to furnish the requisite time for recreation, and to take care that the health of the pupils is not injured during the hours of recitation by causes depending upon the school. In the boarding gymnasia the case is admitted to be different. A continuance of gymnastic exercises in these establishments, when they have been tried and found beneficial, is allowed, but the compulsory attendance of day scholars upon them is not permitted. When regular gymnastic exercises are introduced, it is made the duty of the

school board to see that a proper teacher is provided, and the exercises must be conducted under charge of the director of the institution.

I confess, that the idea of leaving the physical education of children entirely to their parents, especially in the cities and towns where the day gymnasia are usually established, seems to me very unwise; particularly so in Prussia, where all else is regulated, and where the youth are always glad to engage in gymnastic exercises, when the means are furnished to them.

10. *Religious education.* It is enjoined that this contain the whole doctrine of Christian faith, and that the instruction be given according to a regular plan.

The provincial authorities are charged with the communication of the foregoing regulations to the directors and teachers of the gymnasia, and with the superintendence of their execution.

Each instructor manages his class in his own way, subject to the advice of the director, and hence, of course, there is considerable variety. Harsh punishments, and personal violence, are discountenanced in all the classes. Appeals to the moral sentiments and feelings, and admonitions, are the favorite methods of discipline. I nowhere saw the discipline in better condition than in these schools, the youth of the upper class, especially, going through their duties without the necessity for more than occasional admonition, and exhibiting the decorum of gentlemen in whatever situation I met them. The director is the supreme resort when a teacher fails in being able to produce proper conduct on the part of a pupil, and he may dismiss from the institution. This, however, is rarely necessary.

The means of securing attention to study do not differ from those in other countries, and already often alluded to. The system of excitement is carried to a far less extent, in general, than in the French colleges. Emulation is encouraged, but not stimulated into ambition. In the lower classes, the pupils change places during the daily recitations; afterward, they are arranged by monthly trials of composition, and at the examinations; and in the higher classes, from the same compositions, and from the results of their marks for daily recitation, and at the half yearly examinations. Prizes are not given as a general rule, though there are some special ones in certain gymnasia.

This outline of the system of the gymnasia, as regulated by the central authority, requires, to complete it, some account of the regulations for the final examination prior to passing to the university (*abiturientenprüfung*;) and of the means of providing teachers. The regulations for the final examination occupy fifty sections, and enter into very minute details; it will be sufficient for the present purpose to present an abstract of the more important of them under the following heads: 1. The persons to be examined, the object, place, and time of the examination. 2. The authorities by whom, and under whose direction, the examination is to be conducted. 3. The character and subjects of the examination. 4. The kind of certificate obtained on passing the examination satisfactorily, and the privileges attached to it.

1. *The persons to be examined, &c.* Those who intend to embrace one of the professions requiring a course of three or four years at a university, must, before matriculating at the university, pass the ordeal of this examination; the object being to ascertain whether the candidate has made himself duly master of the subjects required for successful entrance upon his university career. The examination must be made in a regular gymnasium, and in some part of the last two months of the scholastic year.

To be admitted to the examination, a pupil of a gymnasium must

have been in its first class at least three terms of half a year each, except in cases where pupils have especially distinguished themselves during a year in this class. Three months' notice of their intention to stand this examination is to be given by the pupils to the director of the gymnasium, who advises with them on their intention, but has no right to prevent any pupil of three terms' standing in the first class from coming forward.

Persons who are educated in private undergo this same examination in any gymnasium which their parents may select. They are required to present beforehand the certificate of their masters as to moral conduct and proficiency, and are examined at a different time from the regular students.

2. *By whom the examination is conducted.* There is a committee for each gymnasium, consisting of the director, the masters who have charge of the higher classes, a member of the ecclesiastical authority of the place, and a member of the provincial consistory. This latter member presides, and his appointment must be approved by the ministry of public instruction. The ecclesiastical member must be approved by the provincial consistory. Besides these, there is a royal commission appointed by the ministry, and consisting of professors of the university and others, who are present as inspectors at the examination. The teachers of the gymnasium and the local authorities of the school are also present at the oral examinations.

3. *Character and subjects of examination.* The examinations are of two kinds, written and oral. The subjects are, the German, Latin, Greek, and French languages,\* for students in general, and in addition, the Hebrew for those who intend to study theology. Religion, history, and geography, mathematics, physics, natural history, and the elements of mental philosophy. The subjects of the written examination are chosen by the royal commissary present, from a list furnished by the director of the gymnasium. These subjects must be such as have never been treated specially in the class-room, but not yet beyond the sphere of instruction of the pupils. All the candidates receive the same subjects for composition, which are given out at the beginning of the examination. The candidates are assembled in one of the halls of the gymnasium, and remain there during the period allotted for their exercises under the charge of one or other of the examining teachers, who relieve each other. The only books allowed them are dictionaries and mathematical tables. The written exercises consist, first, in a German prose composition, the object of which is to discern the degree of intellectual development, and the style of composition of the candidate. Second: of a Latin extempore† and a Latin composition on some subject which has been treated in the course, the special reference in this exercise being to the correctness of the style. Third: a translation from a Greek author, which has not been read in the course, and from Latin into Greek. Fourth: a translation from the German into the French. Fifth: the solution of two questions in geometry, and of two in analysis, taken from the courses in those subjects. Candidates who desire it, may be examined further than is required for passing.

Those who intend to study theology or philology, translate a portion of one of the historical books of the Old Testament, or a psalm, into Latin, adding a grammatical analysis. The time allowed for the several written exercises is as follows: For the German, five hours; Latin composition, five hours; Latin extempore, one hour; Greek translation,

\* In the grand duchy of Posen, the Polish language is also one of the subjects.

† An exercise in which the master speaks in German to the pupil, who must render the German into Latin, in writing.

three hours; translation from Latin into Greek, two hours; French composition, four hours; mathematical exercises, five hours; Hebrew exercises, when required, two hours. Four days are allowed for the examination in these subjects, and they must not immediately follow each other. The viva voce examination is conducted by the masters who have given instruction in the first class on the subjects of examination, unless the royal commissary directs otherwise. The subjects are, first, the general grammar and prosody of the German language, the chief epochs of national history and literature, and the national classics. Second: the translation and analysis of extracts from Cicero, Sallust, Livy, Virgil, and Horace; the ability of the candidates to render the author with judgment and taste being put to the test, as well as their grammatical and archeological acquirements; parts of the examination are conducted in the Latin language. Third: the translation and analysis of Greek prose and of portions of Homer, with questions upon Greek grammar, Grecian history, arts, and mythology. Fourth: translations from the French classics, during which an opportunity is given to the pupil to show how far he can speak the language. Fifth: questions upon the Christian doctrines, dogmas and morals, the principal epochs in the history of the Christian church, and the Bible. Sixth: arithmetic, the elements of algebra and geometry, the binomial theorem, simple and quadratic equations, logarithms and plane trigonometry. Seventh: in history and geography, on ancient history, especially that of Greece and Rome, and modern history, especially that of the country, on physical, mathematical, and political geography. Eighth: in natural history, on the general classification of its subjects. Ninth: in such portions of physics as can be treated by elementary mathematics, and on the laws of heat, light, magnetism, and electricity. Tenth: on the elements of moral philosophy, psychology, and logic. The future theological student must, besides, translate and analyze a portion of one of the historical books of the Old Testament.

4. *The kind of certificate obtained, and the privileges attached to it.* When the examination is closed, the board already alluded to as conducting and superintending it, deliberates upon the notes which have been taken during its course, each member having a vote. Those students who are deemed to have passed a satisfactory examination, receive a certificate called a "certificate of maturity," (*maturitäts-zeugniss*;) the others are remanded to their class, and may present themselves, after an interval of six months, for another examination, unless they are deemed entirely incompetent to continue a literary career. Proficiency in all the subjects of examination is, in general, required to entitle a candidate to a certificate, but exception is sometimes made in favor of those who show great attainments in the languages or mathematics; and in the case of students of a somewhat advanced age, the direct bearing of the different subjects upon the profession which they intend to embrace is considered. The daily records of the class-rooms are presented by the director of the gymnasium to the examiners, as showing the character of the candidates in regard to progress and conduct, these points being specially noted in the certificate. The certificate of maturity contains, besides, the name and address of the pupil, and of his parent or guardian; the time during which he has been at the gymnasium, and in its first class; the conduct of the pupil toward his fellows and masters, and his moral deportment in general; his character for industry, and his acquirements, as shown at the examination, specifying the result in each branch, and adding a statement from the masters of drawing and music of his proficiency in their respective departments; the studies which he proposes to prosecute at the university,



and to commence which he leaves the gymnasium. These certificates are delivered in an assemblage of the students of the gymnasium with suitable remarks. The certificate of maturity is necessary to enable a youth to be matriculated in either of the faculties of theology, law, medicine, and philology, in one of the national universities; to be admitted to examination for an academic degree, to be appointed to office in state or church, or to obtain one of the royal bursaries at the universities. Special exception in regard to matriculation may be made by authority of the minister of public instruction. Students who have not passed a satisfactory examination, and whose parents demand it, are entitled to a certificate, stating the branches in which they are deficient; they may enter the university with this, and are registered accordingly. This registry enables them, if they subsequently obtain a certificate of maturity, and the special permission of the minister of public instruction, to have their matriculation dated from the time of inscription. Pupils who have passed through the third class of a gymnasium are entitled to claim one year of voluntary military service, provided they report themselves at a specified time during their twentieth year.

There are two kinds of schools devoted to the preparation of teachers for the gymnasia, called respectively philological and pedagogical seminaries, (*philologische seminare, pädagogische seminare*.) One of the first kind is attached to the universities of Berlin, Bonn, Breslaw, Halle, Königsberg, and Greifswalde, and one of the second is placed at Berlin, Stettin, Breslaw, Halle, Königsberg, and Münster. Besides these, there is a seminary for teachers of natural philosophy and the natural sciences, at Bonn.



## X. THE QUEEN'S COLLEGES AND UNIVERSITY

### IRELAND.

THE national school system in which secular instruction is kept free from whatever could offend the most susceptible sectarianism, had proved so successful in diffusing a sound elementary education among the children of the peasantry and the working classes of Ireland, that in 1845 the plan was extended so as to provide, under government endowment, the means of obtaining a liberal and professional education for the sons of the middle and upper classes—available to persons of every denomination. This was done by the establishment of the Queen's Colleges at Belfast, Cork, and Galway—now combined and incorporated into the Queen's University, the Senate or governing body of which is seated or holds its meetings at Dublin.

The entire system of United Education has been built up by the co-operation of the two great parties in the State; upon this high ground their only rivalry has been which should contribute most to the common work, and carry out most efficiently its great principle. To the Whig government of Lord Grey, belongs the honor of having first had the courage to proclaim and put in action that principle by the appointment of the first board of commissioners in 1831; the charter which established the schools upon a permanent basis, by constituting the commissioners a body corporate, was a measure of the Tory government of Sir Robert Peel, in 1844; on the other hand, the completion and crowning of the edifice by the addition of the colleges was the idea and enactment of Sir Robert Peel, and has been the achievement, for the greater part, of Lord John Russell. At the opening of the session of parliament on the 4th of February, 1845, her Majesty, in the speech from the throne, recommended to the consideration of the legislature "the policy of improving and extending the opportunities for academical education in Ireland;" and on the 19th of March thereafter, Sir Robert Peel, in reply to a question by Sir Robert Inglis, took an opportunity of laying before the House of Commons an outline of the ministerial plan, both for the establishment of the three new colleges of secular learning and general instruction, and for the endowment of the Roman Catholic Theological College of Maynooth, which had been established by an act of the Irish Parliament in 1795, and had been hitherto dependent for its support only upon an annual grant of very inadequate amount. The two measures thus simultaneously announced and proposed, as in some degree connected with and dependent upon one another, were both carried through parliament in that same session. The Maynooth endowment, however, was made to take the lead, as if to intimate to the gen-

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eral population of Ireland—to what may be more peculiarly called the nationality of the country—that its interests and feelings were what the whole scheme primarily had regard to. If the portion of it relating to the Roman Catholic theological seminary had been defeated, the other portion of it also would probably have been withdrawn. The Maynooth bill encountered a vehement opposition, but it was ultimately passed in both Houses by great majorities. The measure for establishing three secular colleges in Ireland, wholly independent of religious tests or creeds, for the education of the middle classes, was brought forward in the commons by Sir James Graham on the 9th of May. In proposing the second reading of the bill on the 30th, Sir James announced certain alterations which ministers were disposed to make in it, with the view of affording facilities for the theological instruction of the students by clergymen, or lecturers, appointed for that purpose by the several denominations to which they might belong. On the 2d of June, an amendment moved by Lord John Manners for the postponement of the second reading of the bill was negatived, by a majority of 311 to 46. On the 30th, when it was in committee, a proposition from Lord John Russell for making the apparatus of theological instruction in the colleges a part of the establishment to be founded and upheld by the State, was rejected by a majority of 117 to 42. Finally, on the 10th of July the third reading of the bill was carried, against an amendment of Sir Robert Inglis, by a majority of 177 to 126. In the Lords it passed through all its stages without a division.

By this act, entitled "An Act to enable her Majesty to endow new colleges, for the advancement of learning in Ireland," the sum of 100,000*l.* was assigned out of the consolidated fund for purchasing the sites, and erecting and furnishing the buildings, of the three colleges. Her Majesty and her successors were made visitors, with power to appoint, by sign manual, persons to execute the office. The appointment of the presidents, vice-presidents, and professors, was intrusted to the Crown, until parliament should otherwise determine. The commissioners of the treasury were empowered to issue annually a sum not exceeding 7,000*l.*, for the payment of salaries, and other expenses in each college; it being moreover provided that reasonable fees might be exacted from the students. Lecture rooms were directed to be assigned for religious instruction; and it was enacted that no student should be allowed to attend any of the colleges unless he should reside with his parent or guardian, or some near relation, or with a tutor or master of a boarding-house licensed by the president, or in a hall founded and endowed for the reception of students.

A president and vice-president for each college were soon after nominated, and the erection of the buildings was begun. The other appointments were made in August 1849, and the three colleges were opened in the end of October following. An additional sum of 12,000*l.* had shortly before been granted by parliament for providing them with libraries, philosophical instruments and some other requisites.

Originally, it was intended that the number of professors in each college, exclusive of the president and vice-president, should not exceed twelve, and letters patent constituting them upon that basis were passed for each under the great seal of Ireland in December, 1845. Afterwards it was determined that the number should be augmented for the present to nineteen, but that it should not at any time exceed thirty. The vice-president, however, is also a professor. New letters patent embodying that extended scheme were granted in favor of each of the three colleges in November, 1850.

Under the existing constitution, then, the body politic and corporate of each college consists of a president, with a salary of 800*l.* and a house; a vice-president, with a salary of 500*l.* and a house; and professors of Greek, Latin, mathematics, history and English literature, logic and metaphysics, chemistry, natural philosophy, (each with a salary of 250*l.*;) modern languages, natural history, mineralogy and geology, (each with a salary of 200*l.*;) English law, jurisprudence and political economy, civil engineering, and agriculture, (each with a salary of 150*l.*;) the Celtic languages, the practice of surgery, the practice of medicine, materia medica, and midwifery, (each with a salary of 100*l.*) There are also attached to each college a registrar, (with a salary of 200*l.*;) and a bursar and librarian, (each with a salary of 150*l.*) A sum of 300*l.* annually is allowed for the payment of porters and servants. The total annual expenditure for salaries is, thus, (deducting 250*l.* for the professorship held by the vice-president,) 5,500*l.*

The remaining 1,500*l.* of the annual charge on the consolidated fund is allocated to the payment of scholarships and prizes. The scholarships to be awarded at the commencement of the session of 1850-51 at Belfast, are 48 of 24*l.* each to students of the faculty of arts; 4 of 20*l.* each to students of the faculty of medicine; 2 of 20*l.* each to students of the faculty of law; 2 of 20*l.* each to students of civil engineering; and 4 of 15*l.* each to students of agriculture; the number being equally divided in all cases between students of the first and students of the second year. The scholarships are all held for one year only.

The session in all colleges extends from the third Tuesday in October to the second Saturday in June, and is divided into three terms by recesses of a fortnight at Christmas and at Easter. The fees for each class vary from 1*l.* to 2*l.* 10*s.*; and there is besides a payment from each matriculated student to the bursar on behalf of the college of 3*l.* at the commencement of the first year, and 2*l.* at the commencement of every subsequent year.

It had been all along contemplated that matriculation and attendance at these colleges, as at similar institutions established by public authority in our own and other countries, should conduct to graduation both in arts and in every other faculty, except only that of divinity; and all the regulations and arrangements of the academic curriculum in each have been moulded upon that understanding. It was a question for a considerable time whether, with a view to the conferring of degrees and

other purposes, each college should be erected into a distinct university or the three constituted into one university. The latter plan has been adopted, undoubtedly to the placing of the new establishments in a greatly superior position to what they would have held if they had been left each to its provincial insulation; for it could never have happened that a mere Belfast, Cork, or Galway Degree would have carried the same weight with one from the Queen's University in Ireland. The letters patent creating such an university have now received the royal signature. Her Majesty has therein been pleased to declare that "graduates of our said university shall be fully possessed of all such rights, privileges, and immunities as belong to persons holding similar degrees granted them by other universities, and shall be entitled to whatever rank and precedent is derived from similar degrees granted by other universities." The following individuals constituted the government in 1851:

*Chancellor*—His Excellency GEORGE WILLIAM FREDERICK, EARL OF CLARENDON, K.G.

K.C.B. Lord-Lieutenant of Ireland.

*Vice-Chancellor*—The Rt. Hon. MASTERS BRADY, Lord High Chancellor of Ireland.

#### THE SENATE.

His Grace Richard, Archbishop of Dublin.

The Most Reverend Archbishop Daniel Murray, D.D.

The Right Honorable William, Earl of Rosse, K.P.

The Right Honorable Thomas Baron Montagu, of Brandon.

The Right Honorable Francis Blackburne, Lord Chief Justice of the Queen's Bench.

The Right Honorable Thomas Berry Cusack Smith, Master of the Rolls.

The Right Honorable David Richard Pigot, Lord Chief Baron of the Exchequer.

The Right Honorable Thomas Wyse.

Sir Phillip Crampton, Bart.

The President of the Queen's College, Belfast, for the time being.

The President of the Queen's College, Cork, for the time being.

The President of the Queen's College, Galway, for the time being.

Richard Griffith, LL.D.

Dominic John Corrigan, M.D.

Captain Thomas Askew Larcom, R.E.

James Gibson, Esq., Barrister-at-Law.

*Secretary*—Robert Ball, Esq., LL.D.

#### STATUTES, BY-LAWS, AND REGULATIONS.

The Queen's University, founded by Royal Charter, 15th August, 1850, has its seat, and holds its meetings, in the Castle of Dublin, until further order, by warrant of the Lord-Lieutenant.

The Chancellor and Senate are a corporation under the title of the Queen's University in Ireland; may sue, and may be sued, as a common seal, and acquire property not to exceed ten thousand pounds a year.

The government of the University vests in the Chancellor and the Senate. The Chancellor presides over its meetings, and authenticates its acts.

The Senate is formed of the three Presidents of the Queen's Colleges for the time being, and certain other persons appointed by warrant under the sign manual; in all not to exceed twenty. The vice-presidents of colleges may exercise the functions of senators in the absence of their respective presidents. Five members of the Senate constitute a quorum, the chairman having a casting vote.

A vice-chancellor is to be elected annually by the Senate, and when his election is approved of by the Lord-Lieutenant, he is empowered to exercise all the functions of Chancellor in the absence of the latter.

The Senate, in the absence of both Chancellor and Vice-Chancellor, may elect a chairman to conduct ordinary business.

The Senate appoint a secretary and such subordinate officers as may be necessary for dispatch of business.

The Senate have full power to make and alter by-laws and regulations; these being approved by the Lord-Lieutenant, and sealed with the common seal, become binding upon the University.

In all cases not provided for by charter, the Chancellor and Senate shall act in such manner as may appear best calculated to promote the purposes intended by the University.

Meetings of the Senate shall be convened by the secretary or acting-secretary, on the authority of the Chancellor; or, in his absence, of the Vice-Chancellor, or of the chairman of a meeting of the Senate, elected as provided in the charter.

There shall be stated meetings on the 7th of January and 30th of June, in each year, or on the following day, when either of these days shall fall on a Sunday.

The Queen's Colleges of Belfast, Cork, and Galway, are constituted Colleges of the Queen's University, and their professors are considered professors of the University.

The power of the University Senate over the Colleges extends only to the regulation of qualification for the several degrees.

The Queen reserves to herself and successors the office of Visitor, with power to appoint others to execute the duties.

The Chancellor or Vice-Chancellor is required to report annually to the Lord-Lieutenant on the condition and progress of the University.

The Chancellor and Senate have power to found and endow scholarships, prizes, or exhibitions, for which funds may be supplied by grant or donation, under such regulations as they may think fit to make, not interfering with the courses prescribed for scholars of Queen's Colleges, or for matriculation therein.

The Queen's University is empowered to grant degrees in arts, medicine, or laws, to students in the Queen's Colleges who shall have completed the courses of education prescribed by the ordinances. Persons who obtain these degrees shall be possessed of all rights and privileges pertaining to similar degrees granted by other universities or colleges.

The Chancellor and Senate have power to admit, by special grace, graduates of other universities to similar and equal degrees in the Queen's University.

All degrees shall be granted and conferred publicly in the hall of the University.

At all meetings of the Senate to confer degrees, the members shall appear in the full robes they may be entitled to wear in respect of any degrees they may have obtained, or offices they may hold. Any member not possessed of a degree or office, to wear the gown of a master of arts.

Candidates for degrees shall wear the costume of their collegiate standing, and the hoods of the degrees sought.

Candidates being presented to the Senate by the presidents of their colleges, and the secretary having certified that their fees have been paid, and that they have duly passed the examinations, they shall sign the roll of the University, when the Chancellor (or Vice-Chancellor) shall admit them to degrees in the following manner:

In virtue of my authority as Chancellor (or Vice-Chancellor) I admit you (———) to the degree of (———).

The Chancellor (or Vice-Chancellor) shall then proceed to present publicly any exhibition or medal which may have been awarded.

Examiners are expected to attend the public meeting of the Senate.

The present courses of study required by the University are prescribed in the ordinances which were prepared by the presidents of the colleges, approved of by the Lord-Lieutenant, and adopted by the Senate at its first meetings. These ordinances remain in force until altered by the Senate; such alterations to be subject to the approval of the Lord-Lieutenant.

The qualifications of candidates for degrees shall be examined into at a special meeting of the Senate.

Each candidate is required to fill up, with his own hand, a certificate of his name, birth-place, age, and qualifications.

All certificates of candidates to be sent to the secretary fourteen days before examination.

The Senate will receive certificates of medical education for two-thirds of the required courses, from the professors of universities and chartered bodies, and from schools and hospitals, which have sought for and obtained the recognition of the Senate; but it is essential that one-third, at least, of the medical lectures prescribed in the course for the degree of M.D., be attended in some one of the Queen's Colleges.

Examinations for degrees, and for scholarships and prizes, shall be appointed and directed by the Senate, who shall elect examiners annually.

In no case shall any member of the Senate, or any Vice-President of a college (liable to be called upon to fulfill the duties of a member,) be elected an examiner.

The salaries of examiners shall commence from the next quarter-day after election.

Examinations shall be by printed papers.

Each examiner shall be present during the whole time that the candidates are engaged in writing answers to the papers set by him; but if a paper be set by more than one examiner, the presence of one examiner shall be deemed sufficient; if, from unavoidable necessity, any examiner be unable to attend, the secretary shall be present.

Every member of the Senate shall have the right of being present during examinations, but only the examiner specially appointed to conduct examinations shall have the right to put questions.

No candidates shall be present except those under examination.

The examiners shall report to the Senate the result of their examination, and shall deliver in at the same time, in sealed packets, the answers to the examination papers of the classes which they have severally examined.

The amount of fees to be paid on the granting of degrees shall be directed from time to time by the Chancellor and Senate, with the approbation of the Lord's Commissioners of Her Majesty's Treasury.

For the present, the fee on the degree of M.D. has been fixed at £1., and the fee on the diploma of agriculture, at 2s. Fees on other degrees are not yet settled.

The fees are to be carried to the general fund.

Accounts of income and expenditure of the University shall once in each year be submitted to the treasury, subject to such audit as may be directed.

The Bank of Ireland has been appointed treasurer.

Payments shall be made by drafts signed by the Chancellor or Vice-Chancellor, countersigned by the secretary.

Although much clamor has been raised against the Queen's Colleges, because, in the distracted state of Ireland in religious matters, the British Parliament has at last attempted to establish a plan of liberal education, the special purpose and profession of which is to communicate instruction in certain branches of human knowledge to classes which may be composed of young people belonging to various religious denom-

inations, we believe there is no ground for alarm, or distrust, for the safety of the religious principles of the students who may resort to them. On the other hand, securities are provided, more protective and conservative than exist in any other academic institution in the empire, which are open to other than students of one religious denomination.

At the ancient national universities of Oxford and Cambridge, and Trinity College, Dublin, there are no arrangements which even recognize the existence of any form of religious belief but that of the Established Church; not only is the student who may hold any other creed (in so far as such dissenting students are admitted at all) left without any spiritual superintendence whatever, but the entire system of teaching and discipline is in the hands of members of the church established by law, and is regulated and administered in all respects in conformity with the doctrines and ritual of that church. Yet, Roman Catholics generally have long been in the habit of sending their sons without hesitation or scruple to the university of Dublin; freedom of admission to Oxford and Cambridge has always been one of the demands which Protestant dissenters have urged most clamorously; and no non-conformist community has ever put forth an authoritative denunciation of either the demand or the practice.

In the Scottish universities the professors are all by law members of the Presbyterian Established Church; any seasoning of theology, therefore, that may insinuate itself into the lectures delivered by them, or their mode of teaching, must be Presbyterian; it may be Presbyterian of the strongest and, to all but the disciples of Calvin and John Knox, of the most offensive flavor. On the other hand, at least at Edinburg and Glasgow, there is no religious superintendence of the students whatever. So here is the extreme of rigor and exclusiveness, combined with the extreme of laxity and neglect. Yet these universities are attended by members of all communions; and certainly it is not the liberality of the system in giving free admission to all sects which any body of dissenters has ever made matter of complaint.

In University College, London, there is the same freedom of admission for students of all descriptions as at the Scotch colleges, with the same entire absence of religious superintendence as at Edinburg and Glasgow; and no religious test is applied to the professors any more than to the students. Many religious fathers of all denominations, nevertheless, have been accustomed ever since it was established to send their sons to be educated in all the great branches of human learning at University College.

In the first place, every professor in these Irish colleges, upon entering into office, signs a declaration promising and engaging that, in his lectures and examinations, and in the performance of all other duties connected with his chair, he will carefully abstain from teaching or advancing any doctrine, or making any statement, either derogatory to the truths of revealed religion, or injurious or disrespectful to the relig-



ious convictions of any portion of his class or audience. And it is enacted, that, if he shall in any respect violate this engagement, he shall be summoned before the College Council, where, upon sufficient evidence of his having so transgressed, he shall be formally warned and reprimanded by the president; and that, if he shall be guilty of a repetition of said or similar offense, the president shall forthwith suspend him from his functions, and take steps officially to recommend to the Crown his removal from office. The appointments of the professors are all held during the pleasure of the Crown. A triennial visitation of each college is ordained to be held during the college session by a Board of Visitors which has already been appointed by the Crown, and which comprises the heads of the Episcopalian, Presbyterian, and Roman Catholic churches in Ireland.

But further, every student is actually subjected to an extent of religious superintendence such as is enforced nowhere else, unless it be only at Oxford and Cambridge. No matriculated student under the age of twenty-one years is permitted to reside except with his parent or guardian, or with some relation or friend to whose care he shall have been committed by his parent or guardian, and who shall be approved of by the president of the college, or in a boarding-house licensed by the president upon a certificate, produced by the person keeping it, of moral and religious character from his clergyman or minister. The relation or friend to whose care a student is committed must in all cases formally accept the charge of his moral and religious conduct. Clergymen, each approved by the bishop, moderator, or constituted authority of his church or religious denomination, are appointed by the Crown Deans of Residences, to have the moral care and spiritual charge of the students of their respective creeds residing in the licensed boarding-houses; and it is provided that they shall have authority to visit such boarding-houses for the purpose of affording religious instruction to such students, and shall also have power, with the concurrence of the president of the college, and of the authorities of their respective churches, "to make regulations for the due observance of the religious duties of such students, and for securing their regular attendance on divine worship." Finally, at the head of the list of offenses in the statutes of each college for which it is enacted that any student shall be liable to expulsion, are the following: "1. Habitual neglect of attendance for divine worship at such church or chapel as shall be approved by his parents or guardians; 2. Habitual neglect of attendance on the religious instruction provided for students of his church or denomination in the licensed boarding-house in which he may reside."



about 2,900 students, Ireland had but one, and even this one was, from its constitution, not available for the nation at large. The result was, that of nearly 6,000,000 of Roman Catholics in Ireland, about 100 were receiving an university education.

In providing a remedy for the evil thus distinctly recognized, three courses were opened to the legislature. It might have opened the emoluments of Trinity College, Dublin, to all classes of the population without religious distinction; or again, it might have founded colleges for the several religious communities which divide the country amongst them; lastly, it had the alternative of establishing colleges based upon the principle of religious equality—colleges which should give combined secular instruction, and which, whilst they afforded facilities to the various ministers of the Christian faith to teach their respective flocks, should steadily repudiate all interference, positive or negative, with the conscientious scruples of their students.

To the first two courses there were insuperable objections. Trinity College was a Protestant foundation, endowed for the propagation of the Protestant faith, and more especially designed as a nursery for the clergy of the Established Church in Ireland. The attempt to open its emoluments to Roman Catholics and Dissenters, not to speak of the shock it would have given to the sentiment of property, would have called forth such a storm of Protestant feeling as would have rendered it wholly impracticable.

Not only was the combined system alone tenable in theory, but its prodigious growth had shown its singular adaptation to the circumstances of the country. It was this consideration which mainly swayed the minds of the Government in its favor. They are the crown of an edifice designed on the plan of religious equality, and which must not have its symmetry marred by the introduction of any thing heterogeneous to its great idea.

The first criterion of the success of the Colleges is, of course, the number of students who have entered them. On referring to the Calendar of the Queen's University, we find that the total number of students who had entered the Queen's Colleges from the first session in 1849–50 to March 1859, amounted to 1786, of whom 1,265 were matriculated, 521 non-matriculated—that is, students who have not passed the matriculation examination, and do not pursue all the subjects included in the university curriculum, but particular courses of instruction which they may select.

The only sure method of determining the question of failure or success is by comparison with some institution, the position of which is unchallenged. We will take Trinity College, Dublin. The number of students who entered in Dublin during the ten years mentioned above was 2,745. Hence the ratio of the average annual entrances of the institutions compared over a period of ten years is as 178 to 274. Such an average, however, would do injustice to the Queen's Colleges, the numbers of which are steadily increasing. Thus in the year 1858–59, 196 new students entered, while in 1859–60, the number amounts to 207.

If failure can not be predicted of the Queen's Colleges on the score of numbers, no more can it be said that they have failed in their great object of giving united education to the youth of the various religious persuasions. In the ten years, 1849–59, the three great religious communities, which make up the bulk of the population, are thus represented among the matriculated students:—

Established Church,.....	426
Roman Catholics,.....	445
Presbyterians,.....	343

While the 297 students, who have entered this year, are thus distributed:—

Established Church,.....	60
Roman Catholics,.....	69
Presbyterians,.....	59
Other denominations,.....	19

The first thing that strikes us in reading these numbers is, that the Roman Catholics in each case head the list.

Passing to the quality of the education given in the Queen's Colleges, on this score but little needs be said on their behalf. The competence of the professors has, we believe, never been questioned, any more than their zeal, not only in maintaining the existing standard of education, but in elevating it to the highest point which the circumstances of the country admit. Nor have their exertions been unrewarded. Fortunately, on this subject, we are not left to conjecture. We have seen that the competitive examinations for the Indian Civil Service were designed to be a test of "the best, the most liberal, the most finished education, which the country provides;" and a careful study of the papers set will show that the examiners have not willingly let them fall below this standard. The examinations are in effect framed on the model of those to which in the universities candidates for the highest honors at the close of their undergraduate course are subjected. They supply, therefore, a fair criterion of the comparative efficiency of our educational institutions. As the universities bring into course the youth of their affiliated colleges, so these examinations introduce into a still wider arena the youth of the several universities. It is, then, with just pride that the Queen's University appeals to the fact, that, in this competition, looking merely to the number of places obtained, it stands next in order to the Universities of Oxford, Cambridge, and Dublin. If, however, we regard the quality of the answering, the result is still more in favor of the Queen's University. In the only years in which the Universities we have named came into conflict, the average answering of the successful candidates from each stood as follows:—

	1856.	1857.	1859.
Oxford,.....	1,948	1,982	2,103
Cambridge,.....	2,062	2,207	2,020
Dublin,.....	2,473	2,082	2,139
Queen's University,.....	1,955	2,261	2,160

It thus appears that in the last two years the candidates from the Queen's University stood first, in the preceding year third, in the list. This is sufficiently striking, but we can not forbear commemorating a signal instance of success obtained by one of the Colleges. It will be ever memorable in the annals of the College of Belfast, that, while numbering not 200 students, it bore away at this examination, from all our highest seats of learning, the first, fourth, and ninth of twelve vacant places. So much for the direct action of the Queen's Colleges upon the country: no less important has been their indirect influence.

1. It is surely more than a chance coincidence, that within the last ten years, nearly the whole curriculum of the University of Dublin has been changed; all the leading changes being approximations to the curriculum of the Queen's University. Nor is it merely the courses of study which have been revolutionized; the efficiency of the teaching has, in the same period, been vastly increased. Professorial chairs, which had become almost sinecures, have been rehabilitated, and raised by their occupants to a position of dignity and usefulness. Can we be mistaken in attributing this reforming spirit to the emulation of the Queen's Colleges, or in discerning the same influence in the liberality, which has recently endowed scholarships in the same University (some of them of great value,) open to candidates of all religious persuasions.

2. Such has been the silent recognition which the ancient University of Ireland has given to her youthful sister. Elsewhere the recognition has been, if not more obvious, more avowed. In the year 1855, the Secretary of the Queen's University received a letter from the Regius Professor of Law in the University of Cambridge, in which, after requesting copies of the University Examination Papers, as being so admirably adapted to students of the principles of law, "that I should wish to make use of them as much as I can," he adds—"But it is not only in their law papers that your colleges show their merit and utility. The whole system of education pursued by you is, in my humble opinion, so good, and so well suited to the times, that I sincerely trust that it may defy all opposition."

3. Through them was first discovered the wretched condition of intermediate education in Ireland. \* \* Universities without schools are but castles in the air.

The Chancellor of the Queen's University, on the occasion of conferring degrees on the 12th of October, 1860, spoke as follows:—

I have the gratification of being able to announce that the number of the students who have passed our several examinations for the current year exceeds that of those so distinguished on any previous occasion, and is very much in advance of that of 1859, the largest former number, that of the year 1858, having been seventy-six, while that of 1860 amounts to eighty, and in which I find an increase of twenty-two over the number in the past year.

The total number of those whose names were sent in as candidates for examination at this period was somewhat larger, being one hundred and thirty-two, but of these a considerable number failed to present themselves before the examiners, and a few—nine in all—although coming forward for examination, have not been found by the examiners to be sufficiently qualified. I trust that on a future occasion they will appear before us with far better success. In addition to the satisfaction derived from this increase in the number of our candidates, I am happy to be able to add that our examiners generally testify to a high standard of qualification being evinced, as well by those who have competed for special honors as by the entire class of successful students. The university honors, consisting of medals and pecuniary prizes, have been attained by twenty-five of the students present at the examinations, and his Excellency the Lord-Lieutenant has been pleased to assent to the request of the senate, that he would personally deliver to the successful candidates those gratifying evidences of their abilities and industry. Six graduates of other universities have been admitted by the senate to take corresponding degrees in this, which will accordingly be conferred upon them. The Colleges were first opened for the reception of students in the year 1849, and it is only eight years since the first meeting of the senate of the Queen's University to confer degrees was held in this hall. In the colleges the total number of matriculated students, including those of the current collegiate year, has amounted to one thousand four hundred and twenty-three; the number of students who have not matriculated, but who have resorted to the colleges for instruction in various branches of knowledge, has been five hundred and seventy. Thus, very nearly two thousand individuals have entered either as matriculated or non-matriculated students in, I may say, the first ten years of their existence, and the numbers attending the superior classes in the colleges in this year is five hundred and forty-six. In the University we have in the eight years of its action admitted to the degree of Bachelor of Arts, including those presented to us to-day, the total number of one hundred and ninety-eight; to that of Doctor of Medicine, ninety-three; and to that of Master of Arts, fifty-two. We have granted to two the degree of Doctor of Laws, and to eleven that of Bachelor in that faculty. The names of three hundred and fifty-six graduates in each of the various degrees have thus been placed on the roll of the University, while our minor distinctions of diplomas in engineering, law, and agriculture, have been conferred respectively on forty-seven students. In regard to the most important of the social relations of the community—perhaps I must rather, though reluctantly, say, the most prominent of their differences, that which arises from the varying forms of religious worship—the number of the collegiate students represent all the classes into which, in this particular, our population stands divided. The members of the Established Church, the Roman Catholics, the Presbyterians, the Wesleyans, the Covenanters, the Independents, the Seceders, the members of the Society of Friends—all in greater or less proportion, as might be expected from their relative numbers in each locality, have had, and have, their representatives in this common body of associated students; and the general benefit of our collegiate and university system, as they have been freely offered to all classes of our fellow-subjects, have by all been thus freely accepted and enjoyed.

## XI. PUBLIC INSTRUCTION IN AUSTRIA.

### OUTLINE OF THE SYSTEM.

AUSTRIA has a system\* of education which, from the village school to the university, is gratuitously open to all, and which, in all its departments, is based on religion, and governed and molded by the State. Its universality is secured not by direct compulsion, as in Prussia, but by enactments which render a certificate of school attendance and educational proficiency necessary to exercise a trade, or be employed as a workman,† to engage in the service of the State in any capacity, or to be married. Besides this, it is made the interest of the wealthy landholders to contribute liberally for the education of their tenants and the poor, by throwing upon them the support of the pauper population.

All the institutions for education are under the supervision of a Board or Council (the Hof-studien Commission) at Vienna, composed of laymen appointed by the crown, and at the head of which a Minister of Public Instruction was placed in 1848. It is the duty of this body to investigate all complaints against these institutions; suggest and prepare plans of improvement, and counsel the crown in all matters referred to them. Under them is a graduated system of superintendence, to be exercised jointly, by the civil and spiritual authorities in the various subdivisions of the empire. The bishop and his consistory, jointly with the landestelle, has charge of all the scholastic institutions of the diocese; the rural dean, jointly with the kreisamt, of those of a district; the parochial incumbent, and the civil commissary, those of a parish. This general arrangement has reference to the Catholic establishment; but the proper authorities of the Protestant, Greek, and Hebrew churches are substituted for those of the Catholic, for all that regards the members of their several communions.

There are six classes of schools subjected to the superintendence of the education-board; namely, the popular, the gymnasial, the philosophical, the medico-chirurgical, the juridical, and the theological. The four last of these form separately the objects of various special institutions; and, combined together, they constitute the four faculties of the universities.

The gymnasium is the school for classical learning, mathematics, and elementary philosophy.

The popular schools comprehend the establishments of various degrees, in which instruction is imparted of a more practical character, to those whose station in life does not fit them for the study of the learned languages. The lowest of these are the *volks-schulen*, or, as they are often termed, the *trivial* or the *German* schools, established, or intended to be established, in every district or parish of town or county, for the primary instruction in religion

\* The following account of the educational system of Austria is abridged mainly from Turnbull's Austria.

† Turnbull mentions an instance of a large manufacturer in Bohemia, who was fined for employing a workman not provided with the requisite certificates of education.

and morality, reading, writing, and accounts. In the larger places are also numerous *upper schools*, *haupt-schulen*, wherein a somewhat more extended education is given, for persons designed for the mechanical arts and other similar pursuits. These have an upper class called *Wiederholungs-schulen*, or Repetition Schools, who receive instruction in drawing, elementary geometry, and geography, and with it is combined a Normal School for teachers in the *volks-schulen*. In the larger towns are also commercial academies, termed *real-schulen*, in which are comprised two divisions of scholars: the one general, receiving instruction in accounts, geography, and history; the other special, having, in addition thereto, teachers in book-keeping and the principles of trade for mercantile pupils, in natural history and rural economy for those intended for agricultural life, in mathematics, chemistry, and principles of art for students in the higher arts, and in various foreign languages, especially English, French, and Italian, for those who may desire to receive such instruction. In the *volks-schulen* girls are taught, except in rare instances, in separate rooms from the boys; and for the superior instruction of females there are distinct establishments corresponding with the *haupt-schulen* and *real-schulen* of the boys, many of them managed and directed by certain communities of nuns, which are especially preserved for the purpose of education. Industrial schools of various kinds, and for both sexes, are also in some parts combined with these more general educational institutions; but the expenses attending such establishments prevent their being very numerous.

The establishments thus last described constitute the class of *popular schools*. The next above these are the *gymnasial*; of which there are one, or two, or several, in each district, according to the extent of its population. The pupils of the gymnasium are divided into several classes: the earlier ones are taught in religion, moral philosophy, elementary mathematics and physics, and Latin philology. To these subjects are added, for the more advanced classes—partly as perfect courses at the gymnasium, and partly as introductory to the higher instruction in the same branches at the lyceum or university—general history (and especially that of Austria), classical literature, Greek philology, æsthetics (namely, rhetoric, poetry, and a knowledge of the fine arts), and the history of philosophy. Above the gymnasium are the eight universities of Prague, Vienna, Padua, Pavia, Lemberg, Gratz, Olmutz, and Innsbruck; to which must be added the Hungarian university at Pesth. These are divided into two orders—those of Prague, Vienna, Padua, Pavia, and Pesth, are of the first, having chairs for all the four faculties of theology, law, medicine, and philosophy; the others have a smaller number—as, for instance, Gratz, which has but three, having no professorship of medicine, and Lemberg, which has only two. In further addition, according to circumstances and localities, professorships are established, either at the gymnasium, the lyceum, or the university, in the Italian and Oriental languages, in theoretical agriculture, astronomy, chemistry, mechanics, and other branches of practical science.

In most of the provincial capitals, where no university exists (in such towns, for instance, as Linz, Laybach, Klagenfurt, &c.), there is an institution, under the name of *Lyceum*, which answers the purpose of a minor university; wherein public courses of lectures are given in some or all of the four faculties, and in other branches of knowledge. The *degree* cannot, indeed, be taken at the lyceum in any of the faculties; but certificates may be there obtained, which are accepted in lieu of those of the universities, for a large number of cases where certificates are required, and for youths who require them not, the education of the lyceum, extending as it does to the highest Greek and Latin classics, and natural philosophy, answers every purpose of general education. Of these lyceums, there are, in the empire, twenty-three under Roman Catholic direction; besides eleven Protestant,

Lutheran or Calvinist, and one Unitarian. For the instruction of the Hebrew subjects there are gymnasiums and other schools, wherein the same books are read as in the general establishments of the empire, except only that works of Jewish are substituted for those of Christian theology. In special branches of knowledge, the government establishments are very numerous: medical and surgical academies, clerical academies, polytechnic schools, military institutions in all branches, and a college for the Eastern languages, &c.

The popular schools are inspected and directed by the parochial incumbent, who, with a view to this duty, is bound to receive instruction, previous to his induction to a benefice, in the system of scholastic management, or, as it is termed in the language of the edicts, the *science of pedagogy*. He is required, at least twice a week, at certain fixed hours, to examine and catechise the pupils, and to impart to them religious instruction; the parish or district being obliged to provide him with a carriage for that purpose, when the schools to be visited are distant from his residence. He orders removals from lower to higher classes, and grants those certificates, without which no pupil can pass from the popular school to the gymnasium. He is bound to render, periodically, statistical and discriminating returns on the state of the schools, both to his spiritual superior and to the *kreisamt*; to urge on parents the great importance of education to their offspring; and to supply books to those who cannot afford to purchase them, and clothes (so far as the poor fund or private contribution may enable him to do so) to such as, for want of clothing, are prevented attending the schools. Where children of different creeds are intermixed in one school, religious instruction and catechization is confined to the last hour of the morning and afternoon attendance, during which hour the non-Romanists are dismissed, to receive instruction elsewhere from their respective pastors; but where the number of non-Romanists is sufficiently great to support a separate school, the minister of that persuasion, whatever it may be, is charged exclusively with the same duties as, in the general schools, are imposed on the parish priest. To ministers of all professions an equal recourse is, by the terms of the ordinances, allowed to the aid of the poor fund and of the grants from the *kreisamt*. If the schools be too distant or too numerous for the proper supervision of the local minister, a separate instructor is named by the bishop, or, if the school be Protestant, by the provincial superintendent; and, for the visitors of all denominations, the expense of a carriage is equally borne by the public. Except in the points above enumerated, the parochial minister has no power to act, but only to report; in all those connected with defects or deficiencies of the buildings, he, in conjunction with the civil commissary, reports to the *kreisamt*, and in those of merely scholastic nature, as well as in the conduct of the teachers, he addresses his remarks to the inspector of the district.

The teachers at all the popular schools are required to produce testimonials from the Normal School at which they have been instructed, and receive their appointment from the diocesan consistory, or from the provincial chief of any special religions for which they may be intended, but require in all cases the confirmation of the *landestelle*. They are provided with residences attached to the schools, together with fixed stipends during good health and good conduct, and are allowed superannuation pensions, which, if they shall have served for a period of ten years, are extended to their widows, and to their orphans under fourteen years of age.

Each district has an *aufseher*, or *inspector* (named by the bishop from among the parochial clergy holding benefices therein), who compiles detailed statements on every point connected with education, for his spiritual superior, and for the *kreisamt*. Once a year he makes a tour of personal inspection, examines the pupils, distributes rewards to the best scholars, and super-



vises alike both the ministry and the teachers; most especially enforcing the rule, that those books only shall be used, and those instructions only be given, which have been commanded by imperial edict. Above these district inspectors, each diocese has a higher officer, under the name of *oberaufseher*, or inspector-general, who is named by the crown, and is in most cases a member of the cathedral chapter. His supervision extends not to the *volks-schulen* only, but also to the *real* and the *haupt-schulen*; and for these purposes he is the *district-inspector* for the city of his residence, and the *inspect-or-general* for the whole diocese. He is the official referee, whose opinion the consistory are bound to demand in every exercise of their educational functions, and by whom they are in fact principally guided; since every matter wherein their sentiments may not agree with his, must be referred to the decision of the *landestelle*. He examines and certifies teachers for appointment by the consistory; receives quarterly statements in all details from his subordinate inspectors, and embodies them into general reports, for the *landestelle* and the crown; finally, as supervisor of spiritual instruction, he examines candidates for orders, and novices for monastic vows, and grants certain testimonials of proficiency which are indispensable for their admission.

To the *episcopal consistories*, headed by the bishop, is committed the general supervision of all the scholastic concerns of the diocese, the regulations of matters of discipline, the communication of instruction, and the investigation of delinquencies. It is a part of their functions to order the erection of schools, to appoint the teachers, to authorize the payment of pensions to teachers in sickness or in age, and to their widows and orphans, when entitled to them; but in these points, as in all others which involve any exercise of real authority, patronage, or influence, their acts are invalid without the confirmation of the *landestelle*. For the professors of non-Romanist creeds, these respective functions are discharged in their several gradations by officers of their own persuasion. The Protestant *seniors* and *superintendents* are the district-inspectors and the provincial inspectors-general for their respective communities; and the functions of the diocesan consistories are transferred to the central Calvinistic and Lutheran consistories at Vienna.

The schools of higher degree, the *Gymnasium*, the *Lyceum*, the *Theological Seminary*, and the *University*, are all, as well as the popular schools, more or less subjected to the supervision of the diocesan and his consistory; but these depend more immediately on the educational board at Vienna. Over each of them presides a director, who is charged with the general management, in point both of discipline and instruction, acting under the orders of the board, or the edicts of the emperor. The various professors and teachers are all either named or approved by the *landestelle*, or the educational board; the same discriminating precautions being adopted as at the popular schools, for the religious instruction of those who profess non-Romish creeds. In every station, and in the various branches of education, the pupils are subjected to half-yearly examinations by authorized visitors; and from the result of these examinations, as well as from the testimonials which each is bound to produce as to moral conduct, and also as to religious knowledge from the minister of his communion, the director forms the reports which are furnished to the government.

For the erection of popular schools, certain rules are laid down which insure their erection as occasion may require. Although no ordinances compel education, yet the inducements held out to desire it are so great, that for schools of this description there is a constantly increasing demand, partly arising from the people themselves, and partly instigated by the spiritual and civil authorities; and, indeed, so urgent have of late years been applications to this effect, that it has become a usual, although not universal practice, to



require of the parishioners, or the inhabitants of the district petitioning, that they shall bind themselves by voluntary assessment to bear the whole or a portion of the attendant expenses. After the locality has been fixed by the aufseher and the kreisamt, it depends on the landestelle to issue the decree that the school be built; and, this being done, the law then provides for its gratuitous erection and completion. The lord of the soil is bound to grant the land and the materials; the inhabitants of the district to supply the labor; and the patron of the parochial benefice the internal fittings-up; all subsequent repairs, as well as the hiring of buildings for temporary accommodation, being a charge on these three parties jointly.

Notwithstanding, however, these ample provisions for general education, it will be readily conceived, that in a country where certain classes possess large pecuniary means and high aristocratic feelings, instruction cannot be absolutely confined to public institutions. In Vienna and other cities, many academic establishments of a superior order exist, endowed in the manner of our public schools; and in these, or in the schools of the monasteries before mentioned, wherein boarders are permitted to be received, or, finally, under private tutors in their own families, a large portion of the higher classes receive their education.

In addition to the above summary of the system of primary schools in Austria, we present a few particulars as to the inspection of teachers and schools. The law requires that every district inspector, or overseer, must take care—

1. That his district is supplied with a sufficient number of school-buildings; and for this end, he is empowered, in conjunction with the village or town magistrates, to levy a school-rate upon the householders of his district.

2. That all the new school-buildings, which are erected from time to time in his district, are built in healthy situations, not near any noisy workshops, or any swamp or bad smells; that the class-rooms are built according to the plans, which have been prescribed by government; that the class-rooms are well provided with desks, forms, writing-boards, maps, and all necessary school apparatus.

3. That the school-buildings are kept in good repair, well and frequently white washed, and well warmed and lighted.

4. That a good and suitable house is provided for the teachers and their families, and that it is kept in a good condition and fit for their use.

5. That the *cure* of each parish regularly inspects his school; that he watches the conduct and character of the teacher; that he examines the scholars frequently; and that he aids the teacher by his counsel, advice, and assistance.

6. That the parishioners send all their children, who are between the ages of six and twelve, to school regularly, and that they pay the weekly school-fee in a regular manner.

7. That each parochial magistrate is zealous, in enforcing a regular school attendance, in supporting the teachers, and in protecting them from the least disrespectful treatment.

8. That regular periodical reports of the state and progress of the schools in his district are forwarded to the county educational magistrates; who, in their turn, are required to forward a general report of the progress of education in the whole country to the Minister of Education in Vienna.

By these means the government in Vienna is informed every year of the actual state and progress of education, throughout every parish of their great empire; of the wants and difficulties of those districts which require assistance; of the results of particular experiments in particular schools, in the remotest provinces; and of the actual number of children in each county, who have not attended the classes with sufficient regularity.

Each inspector must visit all the primary schools in his district at least once every year.

For this purpose he is required to divide all the schools in his district into two parts, and to visit one of these in the latter part of one year, and in the early part of the succeeding year, so as to see each school in spring and winter alternately.

The overseer is required to give public notice some time previously of his intention to visit any school, and of the day upon which he will publicly examine it.

The law requires the parochial magistrates, the religious minister, to whose sect the school belongs, and a committee of the householders of the parish, to be present at the examination, and impose a penalty on any of those persons, who absents himself without satisfactory excuse. The overseer is required to write down the names of the absentees, in order that the magistrates may be informed, and may impose a legal fine to which their absence renders them liable.

The teacher is required by law to give all his children notice of the day, on which the examination will take place, and to order them all to attend at a certain hour. He is also required to bring the book, in which the daily absentees are marked down, the copy-books and exercises of the scholars, the monthly register of the way, in which each child has attended to his work, an account of the progress the classes have made in the several subjects of instruction, and any notes or observations he may have made in his note-book for the inspector. These several documents are laid before the overseer at the public examination, and are examined by him. The knowledge that this will be done stimulates both scholars and teachers, as each is as unwilling to be reproved for carelessness or incompetency, as he is anxious to be praised for industry and skill.

The law next directs each overseer—

1. To examine what character the teacher has borne in his neighborhood; how he acts toward his scholars, and toward those who live about him; whether he teaches skillfully or not; what methods of teaching he pursues; whether he is industrious and zealous in his work, and whether he continues to aim at self-improvement.

2. To examine the registers of the school, and to observe, how often each child has been absent from the classes; to observe the manners of the children in the classes and in the play-ground, the manner in which they answer the questions put to them, their demeanor to one another and to their teachers, their appearance, cleanliness, and the state of their health.

3. To observe what interest the parishioners and parents take in the state of the school, and in the education of their children; how far they assist the teacher to secure a regular attendance; what excuses they generally make for the occasional absences of their children; with what degree of respect they treat the teachers; and whether they pay the weekly school-pence regularly.

4. To observe the state of the school-buildings, whether they are built in a healthy locality, and after a good and reasonable plan; whether the class-rooms are dry and light; whether they are furnished with sufficient school-apparatus; and whether they are supplied with sufficient quantities of fuel for the daily consumption during winter.

5. Whether the religious ministers of the sect, to which the majority of the scholars belongs, visits and inspects the school-classes often; whether he treats the teachers in a wise and judicious manner; whether he uses his influence among the parents to secure a regular attendance at school; and whether he attempts to diminish any little misunderstandings between the teachers and parishioners, when any such arise.

6. Whether the civil magistrates are strict in punishing any infraction of the school regulations.

The law then proceeds to require, that as soon as the overseer has examined the lists, &c., laid before him, he shall commence the examination. It is formally opened by a short prayer and a speech. After this the overseer examines the children, class after class, beginning with the first.

He first requires the children to read aloud something selected from their school-books, and then questions them about the subject matter of the exercise.

He selects some particular child to answer each question he asks, and does not allow the whole class to shout an answer to it simultaneously, so as to conceal the idleness and ignorance of some by the knowledge and ability of others.

The overseer then dictates something to the school, and requires them to write from his dictation. The scholars are then made to write a copy, and are afterward examined in arithmetic and mental calculation.

The overseer is particularly required to observe, during the course of the exami-

ation, whether there are any scholars, who appear to have been neglected by the teachers, or whether the instruction has been bestowed equally upon all.

The law requires the overseer at the end of the examination, to read aloud to the whole meeting, the names of the twelve scholars, who in his opinion have made the greatest progress in their studies, or who have evidently been the most industrious; to praise them publicly for their industry and ability, and to encourage them and all the rest of the scholars to renewed exertion.

The overseer is next required to publicly reprove any scholar, who has been very idle or negligent in his studies, or in his attendance; and then to urge the children to make fresh exertion to prepare for the next public examination.

After the examination is concluded, the overseer orders whatever repairs the school-building stand in need of, and whatever books and apparatus are required for the class-rooms. He then asks the parochial magistrates and clergy privately, if they have any fault to find with the teachers, and if they have, he examines into the cause of complaint, and acts between the parties as impartial judge. On the other hand, if the teachers have any cause of complaint against the parochial authorities, they state it to the overseer, and he, after examining into the matter, decides upon it as an arbitrator, and as a protector of the teachers.

I have no need to point out how these visits of the representative of the central governments stimulate all the teachers, children, and parishioners. Each is afraid to be found behindhand in the performance of his duties; and each is desirous to merit public praise for his efforts and success. The teacher is protected from neglect, insult, or injudicious interference, while he is at the same time kept under a wholesome check. His close connection with the emissary of the government of the empire, gives him a standing among his neighbors, and covers himself and his office with the respect of the people.

The law respecting the teacher of a primary school prescribes as follows:

The teacher of a primary school must be a person of good sense, having a good, clear pronunciation, good health, and a sound constitution.

The teacher must not merely understand the science of pedagogy, but he must be able to practice it. In order that he may do this, he must not be satisfied with merely having obtained his diploma; he must afterward seek to perfect his knowledge by the study of able and scientific works upon this science; he must make and note down observations on the results of different methods; he must not feel ashamed to learn from other teachers, or even from his own assistants; and he must attend to the remarks and advice of the inspectors.

He must be careful to speak clearly and loud enough to be heard by all his class, when giving instruction.

He must be careful not to neglect any of his scholars, by attending too exclusively to the more clever children.

He must be particularly careful to make his scholars obedient, orderly, and quiet in their classes, industrious, modest, clean, and polite.

He must never endure a lie, and must prevent tale-telling, teasing, and vexing of one scholar by another, buying, selling, and exchanging in school, eating during the hours of instruction, frequent going out of the class-room, careless sitting postures, and concealment of the hands.

He must be most careful to prevent any unnecessary loitering in coming to school, or in returning home, all rough handling of the school-books, loud and unseemly shouting and screaming, and mingling of the boys and girls, &c.

He must take care that the children are clean; that they come to school with clean hands and faces, with cut nails, with combed hair, and with tidy clothes.

He must warn the children not to drink, or to lie down upon the cold ground, when they are hot.

He must warn the children against eating roots or berries, whose properties they do not know, and against playing near deep water, or in public streets.

In winter he must take care that the children shake the snow from their clothes and shoes outside the school door.

He must send unhealthy children home again, and prevent them mingling with the others.

He must take care that the school-room is kept sufficiently warm ; that it is well aired when the children are out, and that it is well cleaned every second day.

In order to make the scholars industrious and obedient, the teacher must win the respect of his scholars ; he can not do this by a sullen, angry countenance, or by using the ruler, or by making a noise ; but by evincing knowledge of his business, by command over himself, and by a manly, sensible, and *unchangeable* behavior.

If the teacher leaves his class-room often in the day, or is inattentive or careless in his manner of imparting instruction, or is lazy, impatient, or irritable, the consequence will be, that his scholars will be disorderly, and will gain little or no good from their school attendance.

The teacher must guard against the extremes of both kindness and harshness ; he must act like an affectionate, but sensible father ; he must make a great distinction between his manner of reproving acts of mere childish carelessness, and actual sins ; he must never employ severe punishments, as long as he can hope to succeed by milder means ; and he must avoid any thing like unfairness in his praises and punishments.

The teacher must carefully avoid hastily resorting to the rod ; he must never box a child's ears ; or pull or pinch them ; or pull its hair ; or hit him on the head, or any tender part ; or use any other instrument of punishment, than a rod or stick ; and that only in cases of great faults. Even in these cases, this kind of punishment may only be administered after having obtained the consent of the overseer, and of the parents of the child, and in their presence.

The teacher must take care to be polite and friendly to the parents of his scholars ; if he is obliged to complain to any of them of their children, he must do it, without showing any thing like personal irritation ; he must never send his complaints to them by any of his scholars, or by third persons ; for, by such means mistakes are easily made, and unkind feelings are often excited.

If the teacher is obliged to speak severely to any one, he must be careful not to do so in the presence of his children.

The teacher must not engage in any trade or business ; he must not keep a shop, he must not play music at public festivities, and he must avoid all companies and places, which would be likely to throw any suspicion on his character, or to injure his reputation.

Year	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	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### PRIMARY EDUCATION IN AUSTRIA.

597

SCHOOLS FOR ELEMENTARY EDUCATION, IN AUSTRIA, IN 1839.

Countries.	Population in 1832.	Children from 5 to 13 years of age.	Primary Schools.		Repetition Schools.		Sexes attending school.		Total Children at school.	Instructors.			Cost of Schools in Florins.
			No. of Primary Schools.	Children in actual attendance.	No. of Repetition Schools.	Children in actual attendance.	Boys.	Girls.		Religious.	Lay.	Total.	
Lower Austria.....	1,400,000	157,105	1,101	154,179	1,019	58,200	118,891	98,488	212,379	1,127	2,212	8,839	841,097
Upper Austria.....	846,000	90,576	626	86,485	608	41,435	65,080	62,840	127,920	718	1,114	1,832	185,871
Bohemia.....	4,172,000	526,569	8,470	494,229	2,431	229,812	376,660	847,481	724,041	1,861	5,781	7,142	475,967
Moravia and Silesia...	2,172,000	287,732	1,866	272,638	1,855	177,239	231,826	218,051	449,877	1,899	8,028	4,435	364,706
Gallicia.....	4,728,000	514,308	1,869	67,278	591	30,022	67,065	30,285	97,300	905	2,037	2,942	124,627
Tyrol.....	889,000	106,489	1,618	107,507	1,191	46,673	80,697	73,458	154,180	1,589	2,185	3,724	101,486
Syria.....	976,000	101,980	624	76,869	567	35,106	61,463	60,512	111,975	947	967	1,614	89,626
Carynthia and Carniola	764,000	85,588	885	27,817	404	16,805	24,435	20,187	44,522	358	618	876	110,545
Illyrian coast.....	476,000	59,250	111	9,917	84	8,316	9,558	8,650	18,233	101	228	327	65,758
Lombardy and Venice	3,694,000	688,685	5,173	253,009	230	7,960	191,167	70,803	261,975	3,697	5,905	9,602	826,800
Transylvania.....	2,026,000	202,600	1,622	51,848	30	720	82,535	19,533	52,048	428	1,507	1,980	60,000
Military Frontier.....	1,198,000	126,674	1,113	64,550	776	20,403	50,808	29,150	85,453	869	1,966	2,128	130,598
Dalmatia.....	390,000	39,000	53	8,962	"	"	3,555	607	3,962	46	98	144	19,370
Total.....	23,652,000	2,866,441	19,536	1,674,788	10,784	664,197	1,814,460	1,024,525	2,838,985	13,183	96,842	40,025	2,795,791

TABLE II.—INSTITUTIONS OF SECONDARY AND SUPERIOR EDUCATION.

	No.	Pro- fessors.	Students.	Onday.	Bursar- ships.	Endow- ments.
<b>UNIVERSITIES.</b>						
Vienna	1	71	4,718	165,671	256	21,583
Graz	1	38	876	25,379	47	1,967
Innsbruck	1	24	317	25,053	52	3,583
Prague	1	63	3,341	66,864	55	3,065
Olmutz	1	28	640	29,325	112	5,600
Lemberg	1	41	1,403	53,593	48	4,490
Pesth.	1	60	1,316	58,321	24	4,500
Pavia	1	40	1,300	98,846	.....	.....
Radua	1	40	1,300	98,846	.....	.....
Total (without Hungary)....	9	353	12,871	543,545	504	43,788
<b>LYCEA.</b>						
Salzburg, with Theol., Philos., and Medicine	1	30	912	23,465	7	455
Linz	1	12	167	12,000	10	362
Leibach	1	22	329	22,100	30	2,294
Klagenfurth	1	14	171	4,624	26	1,469
Klausenburg	1	14	330	8,810	.....	.....
In Hungary, 14*	5	83	1,179	71,149	82	4,520
<b>SEMINARIES FOR DIVINES.</b>						
Vienna (Protestant).....	1	5	59	17,007	30	2,400
Redemptoris (for their order).....	1	6	8	.....	.....	.....
Admont	1	6	8	.....	.....	.....
Mantern	1	7	9	2,650	.....	.....
Tarnow	2	8	156	4,113	.....	.....
Przemysl	1	5	31	3,010	.....	.....
Lemberg	1	9	30	4,765	.....	.....
Carlowitz (Greek Church).....	1	7	46	15,128	.....	.....
Zara	1	1	60	180	.....	.....
Bermannstadt (Greek).....	1	1	60	180	.....	.....
In Hungary, 2†.....	10	54	409	46,933	30	2,400
COLLEGES OF PHILOSOPHY.....	25	106	3,192	127,069	38	2,140
<b>SPECIAL INSTITUTIONS.....</b>						
..... { for boys..	31	195	3,508	248,151	163	29,097
..... { for girls..	10	29	439	21,775	21	2,086
<b>GYMNASIA (Grammar-Schools) { Catholic ..</b>						
..... { Protestant	116	860	25,458	505,350	446	30,515
..... { Protestant	14	89	2,451	12,963	13	72
Total cost of the higher establishments for education, without including Hungary ..	198	1,378	35,038	915,328	681	53,850
Total cost of the higher establishments for education, without including Hungary ..	229	1,808	50,497	1,578,955	1,387	104,558

\* 2 at Presburg; 2 Raab; 1 Agram, Debreczin, Eperies, Erlau, Grosswardein, Kilmarsk, Cashau, Oedenburg, Paps, Saroe-Patak.

† At Keresztur and Torda.

‡ At Krema, Kremmunster, Götz, Trent, Budweis, Leitomischl, Pilsen, Brünn, Nikolsburg, Przemysl, Tarnopol, Czernowitz, Zara, Milan, Brescia, Cremona, Mantua, Bergamo, Como, Lodi, Venice, Verona, Udine, Vicenza.

In Hungary, at Stein am Auger and Szezechin, 2.

§ Hungary has 67 Catholic and 13 Protestant Gymnasia.

The Mining Academy at Schemnitz has 7 Professors, 233 Students: it costs 11,500 florins, and has 55 Bursarships endowed with 11,000 florins annually.

TABLE III.—ACADEMIES AND BOARDING-SCHOOLS.

TABLE III.—ACADEMIES AND BOARDING-SCHOOLS.										
	No.	Professors.	Pupils.		Outlay in florins.	Scholars.			Receiving stipends out of the house.	
			In the house.	Out of the house.		Receiving instruction gratis in the house.		No.		Charge.
						No.	Charge.			
For Boys:—										
For general education.	99	727	6,652	8,153	1,143,286	2,589	florins.	florins.	5,968	
For Theology .....	51	189	8,283	1,319	684,173	2,317	460,888	21,149	...	
For Military Schools.	40	181	8,457	...	613,332	2,725	450,088	...	...	
For Girls .....	101	612	4,125	853	625,286	2,549	855,204	10	...	
For both .....	17	99	1,587	8,028	295,166	1,445	167,652	2,878	77,331	
Total .....	307	1,808	19,004	7,984	3,311,842	11,575	1,057,572	2,769	105,748	

TABLE VI.—ACADEMIES OF SCIENCE, LITERATURE, AND THE FINE ARTS, IN 1896.

	No of Establishments.	Directing.	Members.			Total.	Pupils.	Expenditure.	Bursarships.	
			Ordinary.	Honorary.	Corresponding.				No.	Endowment.
Academies of Science and Literature .....	15	12	1,324	520	607	3,070	278	59,757	21	8,692
Academies of Fine Arts .....	6	56	127	204	33	460	2,798	92,402	40	2,378
Agricultural Colleges and Unions .....	11	8	4,343	603	1,004	5,945	29	21,946	8	1,761
Museums, &c. ....	10	65	2,573	405	40	3,222	704	21,440	12	16
Total .....	45	133	8,867	1,491	1,709	12,807	3,809	195,545	76	7,692



## XII. J. I. VON FELBIGER.

JOHANN IGNAZ VON FELBIGER was born January 6, 1724, at Grossglogau in Silesia, of Catholic parents, studied theology at Breslau, in 1746 entered the princely foundation of "Regular Canons of the Order of St. Augustine of the Lateran Congregation of our Dear Lady," at Sagan in Silesia, in 1758 became arch-priest of the circle of Sagan, and soon afterwards abbot and prelate of the same.

In this office he had the oversight of the churches and schools of the town, and of a number of villages belonging to it; and his attention was thus directed to the condition of the Catholic school system generally, which the Austrian government had suffered to sink in the charge of the priests and especially of the Jesuits, into a most miserable condition of inactivity and indifference. Parochial common schools were very few, mostly in the towns, and of a very low grade, insomuch that many Catholic parents sent their children to Protestant schools.

Felbiger's first distinct efforts to improve the Catholic schools of Sagan were made about 1761, and were much facilitated by the passage of Silesia under the Prussian dominion, at the peace of Dresden in 1745. But finding himself hopelessly obstructed, for the time, by the incapacity of the teachers, he became readily interested in the efforts then making for the improvement of the schools throughout Prussia, and especially in the annual reports of the Berlin Real School, founded by Hecker in 1739, and with which a teachers' seminary was connected in 1748. In 1763, he visited this school, strictly incognito, and acquainted himself with its scope, organization and methods, and in particular with the "Tabular and Literal Method" of J. F. Hahn, whose systematized mechanical character was well adapted to his views as a partizan of the Jesuit principles of education. On his return from Berlin he at once commenced an active course of labors for the extension and improvement of the common schools; sending young men quietly at his own expense to Berlin for training as teachers; repeating his own visits there; founding normal schools at Sagan, Leubus, Grüssau and Rauden, and afterwards at Breslau, Ratibor and Habelschwerdt; himself laboring as a teacher, issuing a series of school-books and catechisms from a printing estab-

ishment of his own, providing for increased salaries to teachers, and generally laboring for a well-regulated school system.

The attention of the Prussian government was attracted by the efforts of Felbiger, and it gladly seized the opportunity of placing so zealous and capable a person at the head of the new school organization for the Catholic portions of the kingdom. In their place he drew up and put into operation the "School Regulations for Roman Catholics in the Duchy of Silesia and County of Glatz," of 3 Nov., 1765; a code which affords a good view of his principles of education.\* The improvements introduced by Felbiger consisted in promoting better preparation of teachers, the substitution of subjects connected with actual life for mere memorizing, previously used, the introduction of simultaneous instruction, in order to accelerate the progress of the children and to interest them, and in the introduction of tables and other similar systematized collections of matter intended to be learned, as a mode of causing uniformity in subjects and methods of teaching, where previously each teacher had followed his own methods or suggestions. The leading feature in these improvements was the simultaneous method. The tables were a mode of "presenting whatever is to be learned, before the eye, in such an arrangement that the pupil can see whatever is to be learned about any one subject, and also the order in which the parts of such material follow each other." There were two kinds of these; one in which a scheme of stems and branches with braces was used, and another, in which by using the initials of each line, the chief and subordinate divisions of the subject were to be remembered. They were used in the catechism, writing, reading and arithmetic, and included in part definitions and systematized presentations of subjects, in part statements of rules. They were to be written on the black-board by the teacher, and memorized by the pupils, proper explanations being given. The second kind were used with the "literal method" already mentioned; by writing the initials on the black-board, and making the children repeat them, as well as the words to which they belonged, until they could repeat the words alone.

In the course of the reorganization of the Austrian government under Maria Theresa, the school system assumed a place as an important object of governmental activity, and was as such taken out of the exclusive control of the clergy. A central school department was organized in 1770, and a normal school established at Vienna. In 1773 the Jesuit order was extinguished, and the comprehensive

\* See Neigebaur, "Common School System of Prussia, (*Volkschulwesen in den Preussischen Staaten.*)"

reformatory plans of the government more fully put in operation. The Prussian government, at the express request of the empress, gave Felbiger permission to enter the Austrian service, and he was appointed "General Director of the School System of the Austrian States," in 1764.

The reforms which he introduced in this new sphere of activity, consisted in the introduction of the features of his system into the three grades of schools that were now established, the use of prescribed text-books and tables, the regulation of summer and winter terms, a systematic division by classes, a very detailed plan of normal lessons, and a thorough official inspection over the system, which it was attempted to render fixed even to stiffness. Felbiger's plans, at first introduced only into Vienna and Austria proper, were received with increasing favor, and were soon extended into the other hereditary states of the empire. Their influence was in fact apparent throughout the whole of Catholic Germany, in an increased interest in the schools.

Felbiger's labors in Austria were too short. In 1778, when the war of the Bavarian succession threatened to break out, he received orders from Friedrich II. either to return to Silesia, or to resign his abbacy at Sagan. Desirous of protecting his favorite enterprise against its adversaries, he chose the latter, and received a compensatory appointment and income from the empress. But after the accession (in 1780) of Joseph II., he was no longer supported by government, and was finally ordered to retire to his deanery at Presburg, and to restrict his attention to the improvement of the Hungarian schools. Here he died, May 17th, 1788.

### XIII. PETER FANEUIL.

PETER FANEUIL, who helped to make "giving" a habit among the merchants of Boston, and whose name is associated with the venerable hall which is one of the consecrated places of American Independence, and of the eloquence which did so much to inspire its achievement, was born of a French Huguenot family, in New Rochelle, near New York, in 1700. His ancestors were of La Rochelle, in France; and one or two of the family, one of whom, his uncle Andrew, was a wealthy merchant, removed to Boston, as early as 1691. His mother was named Anne Bureau, and he was the eldest of eleven children. Of his education, and career as a merchant, we have no record; but that he was successful, liberal, and respected is still witnessed by his own benefaction, and by the records of the action of the town.

What suggested to his mind the idea of presenting the town with Faneuil Hall is not known. There had been a controversy of some years' standing in Boston, respecting the expediency of public market-houses, which had, in 1733, been once established, but soon went into disuse. The party in favor of a public market not being able to carry a vote to erect one, Mr. Faneuil liberally offered, during the summer of 1730, to build one at his own expense, and to present it to the town. A petition was laid before the town to accept Mr. Faneuil's proposal, and was carried by a majority of only seven, out of a total vote of 727. The hostility thus indicated was, however, not against Mr. Faneuil, for a vote of thanks to him at the same meeting was unanimous; but against the principle of a public market. Indeed, the petition would probably have been refused, had it not specified that market-people might, if they chose, sell their wares about the streets, as before.

The building was finished in about two years, including, beyond the first design, the public hall over the market, and several other rooms. It stood where the present building does, and was a handsome edifice of brick, 100 by 40 feet.

Mr. Faneuil died on the 3d of March, 1743, about six months after his hall was completed, aged only forty-two years and about nine months.

The first meeting held in his hall was that at his own funeral; Rev. Charles Chauncy opening with prayer, and John Lovell, Master of the South Grammar School, then delivering the funeral oration.

*Funeral Oration, on Peter Faneuil, Esq.*

*Delivered at Faneuil Hall, March 14th, 1743; being the first meeting of the Inhabitants of Boston, in that place.*

BY JOHN LOVELL, A. M.

I STAND in this place, my fellow townsmen, and my worthy patrons, at the call of those to whom you have committed the direction of your public affairs, to condole with you for the loss of your late generous benefactor, the founder of this house. Certain I am, there are numbers in this great assembly, who could upon this occasion have done more justice to his memory, and have better discharged the office that is enjoined me. But the commands of those (for such I must always esteem their desires,) who have devolved this charge upon me, and the veneration I have for the virtues of the deceased, oblige me to bear what little part I can, in a grateful acknowledgment of the just regard due to the memory of a man, whose name, I am sure, will never be forgotten among us.

How soon, alas! is our joy for having found such a benefactor, changed into mourning for the loss of him! But a few months are passed, since we were framing votes, and consulting the best measures to express our gratitude for his unexampled favors; and the first annual meeting within these walls, that were raised by his bounty, finds us assembled in the deepest sorrow for his decease.

Instances of mortality are never more affecting than in those whose lives have been public blessings. Surely then, every breast must feel a more than common distress, for the loss of one, whose largeness of heart equaled, great as it was, his power to do good. Honest industry must mourn, for which the exercise of his bounty found an almost constant employment; and they that know how to pity the calamities of human nature themselves, will mourn for him that always relieved them.

So soon as he arrived to the possession of his large and plentiful estate; instead of fruitlessly hoarding up his treasures, though no man managed his affairs with greater prudence and industry; instead of wasting them in luxury, though plenty always crowned his board; instead of neglecting the wants of his fellow creatures, an unhappy circumstance too often attending the possession of riches; he made it manifest that he understood the true improvement of wealth, and was determined to pursue it. It was to him the highest enjoyment of riches, to relieve the wants of the needy, from which he was himself exempted, to see mankind rejoicing in the fruits of his bounty, and to feel that divine satisfaction which results from communicating happiness to others. His acts of charity were so secret and unbounded, that none but they who were the objects of it, can compute the sums which he annually distributed among them. His alms flowed like a fruitful river, that diffuses its streams through a whole country. He fed the hungry, and he clothed the naked; he comforted the fatherless and the widows, in their affliction; and his bounties visited the prisoner. So that Almighty God, in giving riches to this man, seems to have scattered blessings all abroad among the people.

But these private charities were not the only effects of his public spirit; which, not contented with distributing his benefactions to private families, extended them to the whole community. Let this stately edifice which bears his name witness for him, what sums he expended in public munificence. This building, erected by him at an immense charge, for the convenience and ornament of the town, is incomparably the greatest benefaction ever yet known to our western shore. Yet this effect of his bounty, however great, is but the first fruits of

his generosity, a pledge of what his heart, always divising liberal things, would have done for us, had his life been spared. It is an unspeakable loss to the town, that he was taken away in the midst of his days, and in so sudden a manner, as to prevent his making provision for what his generous heart might design. For I am well assured, from those who were acquainted with his purposes, that he had many more blessings in store for us, had heaven prolonged his days.

But he is gone! The town's benefactor, the comforter of the distressed, and the poor man's friend.

He is gone! And all his plans of future bounties with him; they are buried in the grave together. He shall be raised to life again; and his intended charities, though they are lost to us, will not be lost to him. Designs of goodness and mercy, prevented as these were, will meet with the reward of actions.

He is gone! And must such men die! die in the midst of their days! Must the protectors and fathers of the distressed be taken away, while their oppressors are continued, and increase in power! Great God! How unsearchable are thy ways! We confess our sins, but just and righteous art thou.

To express your gratitude to your generous benefactor, you have passed the most honorable resolves, and to preserve his memory, you have called this house by his name. But in vain, alas! would you perpetuate his memory by such frail materials! These walls, the present monuments of his fame, shall molder into dust; these foundations, however deeply laid, shall be forgotten. But his deeds, his charities, shall survive the ruin of nature. And to have relieved the miseries of the distressed, to have stilled the cries of orphans, and to have dried the widow's tears, are acts that shall embalm his memory for many generations on earth, and shall follow him beyond the limits of mortality, into those blissful regions where endless charity dwells.

What now remains, but my ardent witness (in which I know you will all concur with me,) that this hall may be ever sacred to the interests of truth, of justice, of loyalty, of honor, of liberty. May no private views nor party broils ever enter within these walls: but may the same public spirit that glowed in the breast of the generous founder, influence all your debates, that society may reap the benefit of them.

May liberty always spread its joyful wings over this place: liberty that opens men's hearts to beneficence, and gives the relish to those who enjoy the effects of it. And may loyalty to a king, under whom we enjoy this liberty, ever remain our character. A character always justly due to this land, and of which our enemies have in vain attempted to rob us.

May those who are the inheritors of the large estate of our deceased benefactor, inherit likewise the largeness of his soul. May the widow, the orphan, and the helpless, find in them a protector, a father, and a support. In a word, to sum up all, may FANEUIL live in them.

May charity, that most excellent of graces, that beam from the breast of the Father of Mercies, which, so soon as ever it enters our bosoms it begins our happiness; charity, the joy of men, of angels, of Almighty God; which completes the felicity of earth and heaven; may it warm the hearts of those who are like to our departed friend in their fortunes, to resemble him too in his bounties: may there be raised up some new benefactors in the room of him we have lost, who shall, if possible, rival Faneuil's spirit. And may there always remain in this town, the same grateful sentiments, the same virtuous dispositions, to remember their benefactors with honor.



# XIV. EDUCATIONAL AND OTHER BENEFACTIONS IN BOSTON, MASS.

(Continued from Vol. VIII, p. 523.)

We continue in this number of the Journal the statistics of the public and private charities of Boston, from an article on the subject in the last (July, 1860) "*North American Review*—by the same hand, we presume, Hon. Samuel A. Eliot.

It would not be difficult to show that a wise and refined beneficence produces fruits of direct utility which the most cunning selfishness could not reach; and therefore that charity, in all its forms, is an agent and a producer of good in a much larger proportion than selfishness. Does not a hospital restore the health and strength of many a poor man, who saves his family from becoming a burden on society? Is not many a child rendered a producer, instead of a mere consumer, by the asylums, the Sunday schools, and the day and evening schools, that are supported by public contribution and private charity? If the industrial and productive effect of many of the institutions called charities were capable of being seen and known, would they not be proved to be a remunerative expenditure?—remunerative, we mean, not to the individual founder or benefactor, for in that case there could be no charity, but to the community in which they exist. This view makes every founder and supporter of a useful scheme of benevolence a public as well as a private benefactor, and adds dignity as well as utility to his labors or his gifts. In a country like this, growing every day in wants as well as in means,—all classes of society, the rich, the poor, and every variety of the one and the other, increasing each day,—institutions of charity must increase with equal growth, and must multiply with the multiplying employments and wants of the population, or else great numbers will be left without resource in the worst calamities and most distressing circumstances of life. Large portions of the community are found in a new condition in every succeeding generation; foundations which were well adapted to their times are, at later periods, either inadequate or comparatively useless; and the charitable as well as other institutions must be modified, or new ones must be created, to meet the wants of each successive age. It is with great satisfaction, therefore, that we observe in our present list so many associations, whose names and objects are new; which have, indeed, begun to exist since 1845, and which show, or tend at least to show, that the resources upon which public spirit may draw are neither hoarded nor exhausted. The old institutions are kept up, and new ones are formed, very generally by voluntary contribution; in a few instances only, by permanent funds; and thus successive generations meet new occasions, without forgetting the perpetual wants of society.

There is one contribution for the general benefit, which, as it comes in the shape of a tax, may not be considered as charity; but the spirit, the essence of charity is in it, and it is in fact principally a contribution by the richer classes for the benefit of all; namely, the school tax, which is larger or smaller in every town, according to the liberality with which the inhabitants provide for the public schools which by law they are obliged to maintain. In Boston it would be thought little to comply with the bare letter of the law. The schools are sustained with a liberality, and a judicious abundance, both in number and in apparatus, which show a spirit quite beyond that of the mere law, for providing adequate instruction for all, and compelling all to avail themselves of it. There are, unhappily, some parents, who are so little aware



of the advantage of having their children attend school, and acquire the elements of knowledge, as to render compulsion necessary to bring the young within reach of instruction; and there are officers employed by the city to gather vagrant children to the schools to which they properly belong, and to put them in the way, at least, of learning something better than the instructions of the street. For the fifteen years last past, the average expense of the public schools has amounted to \$324,263.15 per annum, of which the sum of \$164,620.97 has been the annual cost of the grammar schools, \$83,437.35 of the primary schools, and \$76,204.58 of the various school-houses, making a total amount of \$4,563,947.28 within the period named.

There is another kind of city expenditure which approaches more nearly to the character of charity,—a provision for those who are absolutely destitute of ability and of means for self-support. This includes the inmates of the House of Industry, and the Lunatic Hospital maintained by the city, the former of which has, within fifteen years, required for its support \$751,150, and the latter \$54,541.32. Besides these sums the Overseers of the Poor have distributed to those who need a partial support in their own houses, the amount of \$441,568.77; and the city has also been charged with the sum of \$13,043.03 for the support of paupers in the State Lunatic Hospital, making a total amount of \$1,330,603.12 spent in what may be called the corporate charity of the city. The sums distributed in this manner have increased of late years with great and unexampled rapidity, from causes which we can not search out, but are content to leave in the competent hands of the government. Thus the expense of the House of Industry was \$13,514.02 in the year 1845; in 1850 it had risen to \$61,868.67; in 1855 it was \$38,756.93; and in 1859 it was \$77,517.95. The Overseers of the Poor also in 1845 expended \$7,655.19; in 1850, \$21,761; in 1855, \$37,314.39; and in 1859, \$55,277.74.

The average contributions of twenty-five parishes in the city to various objects of benevolence, left at the discretion of the minister, or a committee, is \$582.14, which would make an aggregate for the whole number (about a hundred) of \$58,214 per annum for the fifteen years of which we are rendering an account. Of this the whole is devoted to the purposes of several of the societies enumerated in our list, especially missionary societies: and a further sum is raised for the specific charities of the parishes to the poor within their own limits. As nearly as we can judge from various considerations, we are disposed to estimate the average expense for these parish charities at \$150 each. This would make \$15,000 a year for the hundred parishes of the city.

A favorite mode of administering to the wants of the poor, as well mental and spiritual as physical, is through the agency of missionaries, either self-appointed, or delegated by others. The rills of charity flow through many such channels; but it is not possible, nor perhaps desirable, to know the precise extent to which distribution of material aid and of spiritual encouragement and comfort is effected in this manner. After all that is, or can be, done by institutions and establishments created by combined resources, there must always be an abundance of cases necessarily left to individual care. To these is to be applied our Saviour's injunction, "Let not thy left hand know what thy right hand doeth;" and we rejoice to be quite sure in some instances, and to believe in many more, in which the rule has been strictly and faithfully obeyed. The extent of this carefully concealed benevolence can not be known of course.

#### CONTRIBUTIONS FROM JANUARY 1, 1845, TO JANUARY 1, 1860.

##### *For Religious Objects.*

Society for Propagating the Gospel among the Indians and others in North America	\$13,607.07
Massachusetts Society for Promoting Christian Knowledge,	15,698.19
1853. Southern Aid Society,	55,842.43
City Missionary Society,	124,212.49
American Tract Society,	155,258.00
Board of Commissioners for Foreign Missions,	322,045.15
Amount carried over,	\$586,663.37

	Amount brought over,	586,663.87
82,283.11	American Home Missionary Society,	95,084.67
90,000.00	" Baptist Missionary Union,	85,000.00
60,000.00	Foreign and Domestic Missions (Episcopal Church,)	80,351.00
60,000.00	Episcopal City Mission,	14,270.00
60,000.00	E. B. Society,	31,000.00
98,187.00	Massachusetts Convention of Congregational Clergymen,	1,000.00
60,000.00	Episcopal Diocesan Missions,	13,500.00
60,000.00	American Education Society,	28,554.71
60,000.00	St. Mary's Free Church for Sailors,	16,000.00
60,000.00	Benevolent Fraternity of Churches,	102,371.80
60,000.00	Methodist Episcopal Church, for foreign missions and	
60,000.00	church building,	216,701.16
60,000.00		<u>\$1,220,726.71</u>
	<i>For Charitable Objects.</i>	
93,670.00	Massachusetts General Hospital and Asylum for the	
6,100.00	Insane,	\$357,530.50
60,000.00	" Eye and Ear Infirmary,	46,518.75
1851.	" School for Idiotic and Feeble-Minded	
	Youth,	78,680.00
	Temperance Society,	6,000.00
1857.	" Medical Benevolent Society,	1,073.00
	Boston Dispensary,	35,253.75
	" Female Asylum,	30,267.11
	" Port Society,	38,593.00
	" Marine Society,	11,300.00
	" Children's Friend Society,	53,597.72
1840.	Association for Relief of Aged and Indigent Females,	117,373.93
1847.	Temporary Home for the Destitute,	35,955.53
	Penitent Female Refuge,	25,638.13
	Needlewoman's Friend Society,	3,031.00
	Old South Quarterly Lecture,	16,857.60
	Howard Benevolent Society,	65,902.05
	Widow's Society,	12,741.35
	Fragment Society,	1,764.75
	Seaman's Friend Society, and Sailor's Home,	34,334.96
	" Aid Society,	30,937.00
	Sailor's Snug Harbor,	65,000.00
1849.	Society for Relief of Aged and Indigent Ministers,	18,185.00
	St. Stephen's Mission to the Poor,	46,421.00
1849.	St. Stephen's Brotherhood,	3,545.00
	Society for the prevention of Pauperism,	21,416.65
1847.	German Aid Society,	*2,767.24
1855.	Church Home for Orphan and Destitute Children,	21,037.91
	Warren Street Chapel,	75,000.00
	" " for rebuilding,	5,000.00
1852.	Provident Institution, (Franklin Street,)	†71,745.26
	Charitable Association of Boston Fire Department,	5,460.17
1858.	Channing Home,	3,469.44
1856.	House of the Angel Guardian,	28,669.00
	Colonization Society,	23,060.99
1849.	Children's Mission to the Children of the Destitute,	21,935.00
	Charitable Orthopedic Institution,	1,500.00
	Charitable Irish Society,	3,353.00
	Methodist Episcopal Church,	61,182.64
		<u>\$1,482,726.43</u>

\* Estimates of receipts of German Aid Society, previous to 1845, \$4,000.

† Twenty per cent. may be added for clothing sent in by dealers in suitable articles.

## EDUCATIONAL BENEFACTIONS IN BOSTON.

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*For Purposes of Education.*

1857.	Boston Public Library, cost,	263,633.83
"	" " donations,	74,100.00
"	" Athenaeum, donations,	65,000.00
"	" " subscription to new shares,	158,362.07
	Harvard College,	706,338.96
1859.	Museum of Natural History, at Cambridge,	75,000.00
	Trustees of Donations for Education in Liberia,	33,781.50
1855.	Massachusetts Institution for Girls, at Lancaster,	19,875.00
	Perkins Institution for the Blind,	66,301.00
	Boston Asylum and Farm School,	68,064.79
	American Academy of Arts and Sciences,	11,500.00
1846.	State Reform School,	73,500.00
1853.	Industrial School for Girls,	18,000.00
1852.	Tufts College,	100,000.00
	Latin School,	4,500.00
1851.	School of Design,	8,000.00
	Massachusetts Historical Society,	*34,075.00
	Mechanic Apprentices' Library Association,	2,091.91
	Methodist Episcopal Church,	173,590.36
		\$2,055,709.66

*For Monuments.*

1862-9.	Washington Memorial, by Mr. Everett,	†\$70,000.00
1854-6.	" " Mrs. Otis,	6,000.00
1856.	Statue of Franklin,	20,000.00
1853.	" Webster,	24,550.50
1859.	" Rev. Hosea Ballou, collected in Boston,	1,784.00
1850-60.	Statues at Mount Auburn,	21,000.00
1859.	Copley's Picture of Charles I. in the House of Commons,	7,500.00
1851.	Healy's Picture of Webster in the Senate of the United States,	5,000.00
1859.	Arcadian Boy, by Story, in City Library,	1,500.00
1856.	Plymouth Monument by Billings, subscribed in Boston,	11,500.00
		\$168,784.50

*Miscellaneous.*

1847-8.	Contribution for Ireland, during famine,	\$52,162.02
1859.	Model Lodging-Houses, (by an individual,)	50,000.00
1858.	Contribution for Fayal, during famine,	9,800.00
	Annuities since 1845,	64,000.00
1847.	Contribution for Nantucket, after fire,	18,124.81
	Prison Discipline Society, in ten years,	18,000.00
		\$212,086.83

*Recapitulation.*

	For Religious Objects,	\$1,220,726.71
	" Charitable Purposes,	1,482,726.43
	" Education,	2,055,709.46
	" Monuments,	568,784.50
	" Miscellaneous,	212,086.83
		\$5,140,033.93

There is a view to be taken of the relative amount of the charities enumerated, and the public objects promoted, in the preceding catalogue, to the property taxed in the city (generally supposed to be below the amount actually possessed,) which is well adapted to diminish any feeling of exultation or self-approbation into which we may be betrayed by the survey of the consid.

\* Previous to 1845, \$5,200.

† Collected in various parts of the United States, by the labors of a Boston patriot and scholar.

able aggregates we have enumerated. The valuation on which taxes were assessed in 1845 was \$135,948,700. In 1859 it was \$203,429,000. The mean would be about \$200,000,000, the lowest probable income of which is from ten to twelve millions annually. The sum of the amounts expended for the public objects enumerated above is about \$5,140,000; but calling it \$5,300,000, we make full allowance for anything omitted or unknown, the average is \$333,333 per annum, which would leave from \$9,646,000 to \$11,646,000 for expenditure and reinvestment. Whatever allowance may be made for error or miscalculation, in this estimate of income, enough will remain to show that the donations in charity, or for great and permanent objects, are not of an amount that need cause any alarm for the permanent decrease of our resources from extravagance in this luxury; but that as long as the property of the city doubles in about fifteen years, its charities should also double, in order to maintain the ancient reputation.

In our advance as a people in age, population, and resources, the physical wants and calamities of life are not likely to be neglected among us. They are obvious to the eye, and of a nature adapted to awaken, in every feeling heart, a strong and active sympathy. There is no reason to apprehend that they will ever be forgotten or neglected. We wish it were so with the interest of that vitally important concern of life, education. We have reached that condition of society, in which the value of elementary instruction is universally perceived and acknowledged; and we feel every day the immense advantage which the spread of knowledge so far in our community has given us, in the character, the ambition, and the success of our population over those of any equal number without similar privileges. But we have not yet attained an adequate sense of the extent to which instruction is a benefit. We are too apt to think that the common school is all we want,—that it is glory enough for us, in the way of education, to have made its elements universal: and it is a matter of boasting that every person in New England can read. But of what use would be the power of reading, if no opportunity were furnished of usefully exercising the power, by the perusal of books containing the last and best results of study and research? We must have among us minds cultivated to the necessary point of furnishing the best books and materials for study, or we must be ingloriously dependent upon other nations for all progress, and even for preventing a retrograde movement. We must be advancing or retreating; and in this country, with such entire security from foreign interference, and such rapid accumulation of material wealth, there is nothing wanting for progress but the perception of what is necessary, and the willingness to devote the appropriate pecuniary resources to its attainment. Of the latter there is obviously an abundant supply. The moment it is perceived that any particular object is desirable, the means are readily and eagerly furnished by men of mental and pecuniary ability. The great difficulty is to persuade them that any particular study or acquisition is necessary; and we do not wonder at the existence of the difficulty, so long as all that was thought important was the knowledge of the past, without much reference to the present and the future. But the relative value of particular studies is much changed. The past history and languages of men and nations are not the only attainments which are now to be mastered by the scholar. The laws of mind and of matter are to be investigated, with a thoroughness and precision which have not heretofore been reached, nor even sought. The planet upon which we live is full of subjects upon which men are still profoundly ignorant, and the investigation of which will well employ, for ages to come, the limited number who are able, from their organization and circumstances, to pursue such studies. Those, however, who are best fitted by organization and circumstances for the more recondite pursuits of science, philosophy, religion, and law, need a preliminary instruction in a variety of branches of knowledge, for which colleges and universities are the appropriate institutions. The young man must be carefully trained, as far as training can carry him, if he is to be expected to advance beyond his predecessors in the career of knowledge. Discoveries in the external world are not made by accident, so much as by the application of mind to the circumstances around us; and mind, in order to be productive, must be cultivated. Not can its own laws be investigated by

those who are not versed in all that has yet been ascertained with regard to the intellectual and immortal part of human nature. If, then, either mind or matter is to be intelligently studied, we must have something more than the common school, which simply gives the first means of progress, and of appreciating, perhaps, the greater advancement of the higher order of minds. The grammar-school is indispensable, but so much more are the college, the university, the professional and the scientific school. We rejoice to perceive, in the foregoing catalogue, some evidence that this truth is beginning to be acknowledged in our community; and that a larger proportion than heretofore of the wealth distributed both by the public and by private persons, has been devoted to our highest educational institution. The very considerable sums given by the Legislature and by individuals to Harvard College, the greater part of which are for well-considered and most important objects, are valuable evidence of the general progress of ideas upon the subject of education. But they must be still further extended, before the wants of the age, and of all ages, are seen and supplied; and when this is done, there must be one thing more accomplished, and that is a change in the comparative estimation by the public of scientific and political reputation. When it is seen, as one would think it must be seen, sooner or later, that political advancement, in this country, does not imply, as it has done in other times and nations, great power over the relations of society, and much less over individual members of society, the exclusive ambition for political distinction, which is a sort of contagious mania among us, must subside; and other objects, such as science, theology, and law, must share, at least to a greater extent than heretofore, the devotion of aspiring minds. Power, we know, will always be the object of ambition; but, we trust, not necessarily nor exclusively political power. In this country, already, the possession of political power means a very different thing from what it means on the Continent of Europe, or even in England. The material rewards are much less dazzling, and much less really important; and it would be by no means surprising, if such a revolution of ideas should take place, that men should consider political office an encumbrance and a burden, to be avoided by almost any sacrifice. Municipal offices are so regarded, at this hour, in some cities of Germany, and men who are elected, or whose turn has come to undertake the toils of office, are subjected to heavy and almost ruinous fines, if they refuse the proffered honor and labor.

But, without contemplating so remote and so vast a change of ideas and feelings, we can imagine the claims of knowledge to be more widely admitted than they are at present. This is nothing more nor less than believing in the progress of civilization; and that depends upon many other things besides political institutions. Nobody can be more free, or less happy, in social relations, than a North American Indian. In the absence of external control, which constitutes what is commonly understood by freedom, self-control becomes more and more important; and self-control is one of the last and best results of the highest religious, moral, and intellectual cultivation. Upon the extension of personal self-control, as a principle to guide our public and private conduct, depends the success not only of individuals, but of nations, in the career of humanity; and whoever desires to see the institutions and the liberty of the country preserved must desire the progress of education in every department, until all the powers of the human mind shall be so appropriately and adequately cultivated, as to make them subservient to a virtuous will. It is to intellectual culture in all departments of mind, therefore, that we desire to call the attention of the philanthropic among us, most particularly in the present state of our institutions and our charities. It would seem that all other departments to which liberality may be called to extend its benefactions are now more or less faithfully provided for. Elementary education, physical suffering, poverty, old age, and mental infirmity, are all furnished with the means of supply or relief. Vast sums are annually sent abroad for the religious instruction of those who are not yet in a condition to be benefited by it; while the proper and sufficient collegiate education of our own young men, for our own wants, is not adequately provided for. It is on all accounts desirable that our colleges should be better furnished with pecuniary resources

in almost every department of learning. Scarcely a professor can be found who is properly supplied with the means of comfort, nor an institution of the class referred to, with the libraries and collections necessary for adequate instruction in this day of progress. It is at once gratifying and humbling to witness the eagerness with which young men crowd to institutions, which, however imperfect, are yet the best that can be found in the country; how fully appreciated and how eagerly used are the means of progress which are supplied; and ample guaranty is thus given that increased advantages would be neither neglected nor misused. We shall deem no labor lost which shall tend in any degree to arouse the community of our age and nation to a sense of the importance of affording to all who seek it the means of the most thorough and accurate instruction in every branch of human knowledge. By this process we shall not only raise the standard and increase the product of intellectual studies and pursuits, but we shall secure for all future time the great charities, and the religious and literary institutions, which are the protection, the ornament, and the glory of nations.

most abundant and complete. The results of the investigations of the Board of Education in the year 1851, and the results of the investigations of the Board of Education in the year 1852, are given in the following table.

THE BOARD OF EDUCATION, BOSTON, 1851.

The Board of Education, in its report for the year 1851, has given a full and complete account of the state of the public schools in Boston. The results of the investigations of the Board of Education in the year 1851, and the results of the investigations of the Board of Education in the year 1852, are given in the following table.

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## XV. MUSEUM OF COMPARATIVE ZOOLOGY.

THE establishment of a Museum of Comparative Zoölogy, in Cambridge, Mass., in connection with Harvard College, and by the combined liberality of the State, the College, and individuals, under the auspices and with the results sets forth in the following extracts from the Proceedings at the Dedication of the building to the purposes of the Museum, on the 13th of November, 1860, is the great event in the educational history of the year.

### THE MUSEUM AND ITS ARRANGEMENTS.

The handsome edifice, which is but the beginning of the large and splendid museum contemplated, and comprises a little more than one-tenth of it, is situated on Divinity Avenue, opposite Divinity Hall. The lot of land on which it stands is an oblong square of about five acres, given by the university, in trust, to the museum. The building which it is contemplated to erect will represent three sides of a rectangle with an open square facing Divinity Hall. Its dimensions will be as follows:—The main part 360 feet in length, two wings 200 feet in length, each; making an entire length of 760 feet, and having a uniform width of 60 feet. The building already erected is the beginning of the north wing nearest to Divinity Hall, and measures 80 by 60 feet. It is, apparently, four stories in height; but the second rows of windows belong to the large and commodious galleries which surround the rooms. On each floor are four rooms of equal size, measuring each 30 by 40 feet. The rooms are fitted with cases made with the utmost care and nicety of finish, and of a pattern which the long experience of Professor Agassiz has proved to be the best in use. So accurately made are they, that a shelf from any one cabinet will exactly fit any other cabinet in the building. Entering the building from the north side the lower room on the left—the south-east room—is the students' laboratory, the room specially used by the students of the Zoölogical department of the Lawrence Scientific School. The south-west room is the lecture-room of the museum, where not only students of the Scientific school, but teachers of the state, can avail themselves of Professor Agassiz's valuable instruction. It is very gratifying, says Professor Agassiz, to see the interest manifested by the teachers in these lectures. Over one hundred teachers, including sixty or seventy ladies, attended the lecture of last Wednesday, and on Saturdays the number is much larger. The north-west room belongs to the assistants in the building; it is here that specimens are opened and arranged for exhibition or preservation, so that the aspect of this apartment is continually changing, owing to the reception and disposal of many hundred specimens daily. The north-east room is Professor Agassiz's private laboratory, and the galleries above are to be devoted to his library. The remaining galleries on this floor are used as workshops and sorting-rooms, excepting that of the lecture-room; which is devoted exclusively to sea-urchins and star-fishes. Passing into the second story we see, carefully arranged, all those splendid specimens which have been the result of so much patient research, and in which Professor Agassiz may take a just pride. The south-west room of the second story is devoted to corals, arranged according to the locality of the species. A splendid collection, the "Polyp Fauna of Florida and the Gulf of Mexico," occupies the case on the north side of the room. The south-east room and its galleries are occupied by



molluscs, &c. Here is a case of "Jurassic Cephalopods" and a large variety of other specimens. One peculiar feature of arrangement whereby the study of specimens is facilitated, is the use of colored boxes to represent different geological periods. Thus, blue boxes contain the jurassic; green, the cretaceous; orange, the devonian, &c. In this room the main part is assigned for the univalves, and the galleries for the bivalves. In the north-east room are articulates;—insects, crustacea and worms; the insects being below and the crustacea in the gallery above. The insects are kept in air-tight boxes, from which the light is excluded. But the plan proposed is to have them arranged in glass-covered boxes. The north-west room is devoted to fossil vertebrates. The galleries of this room are filled with fossil fish placed in this proximity to the specimens below in order to compare the different specimens.

The attic contains an immense number of specimens, unarranged; such specimens being stored as are required to be kept in a dry state. The basement is used for the reception of articles and the storage of alcoholic specimens, or such as are required to be kept in a moist state. Here are stored a collection of fishes—numbering about 47,000 specimens, &c. The arrangement of the fishes will involve an outlay of about \$12,000 for alcohol, jars, &c. Yet it is to be hoped that this sum may soon be raised to place upon the shelves of the museum a collection which stands *third* in the world. Its superiors are the collection in the Jardin des Plantes at Paris, which numbers 5,000 different species, and that in the British museum which has less than 4,000 species, while our museum has upwards of 3,500 species.

This is a noble beginning of what is destined to be the most magnificent collection in the world.

In the presence of the authorities of the University and the Commonwealth, and of a large concourse of friends of science and learning, the keys of the Museum were delivered by Dr. Bigelow, Chairman of the Building Committee, to Governor Banks, as President of the Trustees, to whom the care of the museum is committed by Act of the Legislature of Massachusetts, with appropriate remarks; the most important of which, in our opinion, is this—that "a building sufficient to the present need of the institution has been created for a sum which is less than the estimated cost, and less than the sum actually appropriated by the Trustees." On receiving the keys, Gov. Banks expressed the satisfaction of the Trustees with the work, and ex-President Walker invoked the divine blessing on the enterprise which was to be carried on within its walls. Addresses were then made by President Felton, Professor Agassiz, and Governor Banks. From these admirable addresses we make such extracts as will exhibit the history and aims of the founders of the institution.

#### PRESIDENT FELTON.

The members of our university justly consider the founding of such a museum as a great event in the history of Harvard. No doubt it will increase the means of intellectual cultivation enjoyed by the university, to a large extent, and in a department of the highest interest and importance. They rejoice in its achievement, not only for this reason, but chiefly on account of its larger relations to the Commonwealth and to mankind. They see in it a means of drawing hither ardent and aspiring youth, fired with the sacred love of nature, who shall in due time go forth bearing with them over the land the lights of science. They see in it the means, under the noble provisions of the law, of acting directly upon the public and popular instruction of the state, by opening its priceless treasures, and

the living lessons of master minds—present and future—to the great body of Massachusetts teachers, men and women. They see in it the means of adding day by day, to the sum total of the world's known truths. It is because they take this broad view of the blessings such an establishment may diffuse, and because they know that its efficiency will be greater, if connected with the university, than it could be in an isolated condition, that the corporation of Harvard College, under the presidency of my predecessor, and with his wise approbation and vigorous support, readily joined with the liberal private citizens, and the enlightened authorities of the state, in producing this brilliant result. By such means, and under such circumstances, our museum has sprung into being. Its benefits are already beginning to be felt at home; and it has excited the admiration of the wisest men from abroad. Though but a small part of the whole scheme has been as yet carried into effect, it enjoys the inestimable advantage of having its foundations laid according to the most comprehensive principles, embodying the last results of science. The building has been planned and constructed, after mature consideration of every point, with the strictest reference to its objects and use, by the most distinguished architectural skill. In arrangement and classification, in the facilities afforded for study and practical use, nothing is wanting which in the present state of science can be supplied.

A Museum of Comparative Zoology is a chapter in the history of Creation. The university was consecrated in the beginning to the truth, as the highest aim of education. Science, letters, art, Christian morals and manners, come within the generous scope of the founders, and the noble array of benefactors, who have built it up to its present height of usefulness and renown. The laws of nature and the forms of life, no less than the messages of prophets and the evangelists of apostles, are revelations of God, to be reverently studied by man.

An administration of the government of Massachusetts, honorably distinguished by its steady support of public education and the advancement of science, is soon to close. Many of the objects of ambition, most eagerly sought, are ephemeral when gained, yielding only the triumph of a day: but the triumphs of truth are permanent. Science is not of one age or one country: it is coeval with eternity, and coextensive with the universe. He whose fame is identified with its advancement, has won a "possession forever."

## ADDRESS OF PROF. AGASSIZ.

When I came to this country in 1846, I had no thought of staying here. I had come upon an invitation of Mr. John A. Lowell, to deliver a course of lectures before the Lowell Institute. I had taken leave for a year and a half from the college of Neuchâtel, with which I was then connected, and it had pleased the King of Prussia, at that time Prince of Neuchâtel, to grant me the means for a scientific exploration of some parts of this continent. I had not been much more than a year here, when the convulsions which disturbed Europe, led me to consider seriously how far it would be advisable for me to return to my native country, or to prolong my stay in America.

While I was hesitating, the late Honorable Abbott Lawrence one day called upon me, and explained to me confidentially his plans respecting the foundation of a Scientific School in Cambridge, stating that it would be an additional reason for him immediately to carry out his intention, if I should accept a professorship in that school. I did not feel at liberty to decide before having obtained a regular discharge from the College with which I had been connected for fifteen years. This was, however, granted in the most considerate manner, and in the spring term of 1848, I entered upon my duties as professor of the scientific school—a post which I still hold.

One of the most tempting inducements I had for staying in America was the offer made me by the superintendent of the United States coast survey, to avail myself of the facilities afforded by the different parties carrying on the work of the survey, to visit in person the coast and collect the animals living along our shores, with most accurate indications respecting the nature of the bottom on which they are found, the depth at which they occur, and other information for which naturalists sigh, without having frequent means of obtaining them. To these facilities I owe part of the most valuable information I have been able to obtain in my life.

Placed as I was, at the head of a new department of public education, I had now to make the necessary collections for my instruction, as none existed in the university; and during my vacations I visited successively, for that purpose, our southern and western states, delivering lectures on my way to defray the expenses necessary to make extensive collections, which to me were very heavy, as I never had any thing but what I earn from year to year.

In 1852 the treasurer of Harvard College obtained by private subscription the sum of \$12,000, amounting to the expenses I had thus far incurred, to secure as property for the university the collections I had brought together. With these new means at my command, and some additions, obtained in the same way as in former years, I have gone on enlarging the collection until, by a succession of fortunate circumstances, a movement was started to found a public museum.

Nearly two years ago Mr. William Gray presented to our university the sum of \$50,000, left by his uncle, the late Hon. Francis C. Gray, to found a Museum of Comparative Zoology, without determining the institution to which it should be granted, but leaving to his executor the final disposition of his generous bequest. With such a basis of operations it was at once plain that the usefulness of the museum of the university should be extended beyond what had been thus far contemplated, and that perhaps a great establishment might be founded, if the public in general could be interested in it. With this impression, a committee of gentlemen was formed at the suggestion of the committee annually appointed to examine the condition of the scientific school, and in a surprisingly short time, the sum of \$75,000 was raised by private contributions, with the view of erecting a suitable building to receive and preserve the collections then on hand.

A magnificent grant of \$100,000 was also made by the legislature, in accordance with a recommendation of His Excellency, Gov. Banks, in his message to the general court. The nascent institution was thus endowed with \$225,000, and it became necessary to organize a permanent body to administer its affairs. A law was passed to that effect by the legislature, in the summer session of 1859, and an agreement having been entered upon with the corporation of the university, the college ceded to the board of trustees, their collections and a piece of land of about five acres upon which to erect the building of the museum, reserving to the professor of zoology and geology, the administration of the collections under the direction of a special faculty, while the whole became public property as an independent institution under the direction of the board of trustees.

Committees were at once organized to carry out the plans for the erection of a suitable building and the general arrangement of the museum.

The most important point now was to adopt such a plan for the building as should, in every respect, answer its purpose, and it is highly gratifying to me to be able to say that I have found in the building committee, gentlemen ready to exert themselves in every way in order to carry out the objects of such an edifice, even to yield their own preferences in consideration of certain requirements of a scientific establishment, which are not easily combined with architectural conceptions. For years past I had been turning over in my mind a general plan for a great museum, and have been aided in my attempts, by the skill of my friend, Mr. Greenough, who finally devised a plan which appeared to me entirely unobjectional; so that when the time for action came, the plans were ready for consideration, and required only to be worked up for execution.

This was admirably done by Mr. Snell, and the building, as it stands, is the result of these combined efforts. But the skillful management, in consequence of which the appropriation for its erection was not exceeded, is entirely to be ascribed to the zeal and activity of the building committee. I need hardly add, that a part only of the general plan has thus far been carried out, and that as the portion now erected is only a part of a wing, room is left for any architectural embellishment which the future may render desirable.

The committee of the museum had another and important office, that of regulating the expenditures concerning the collections. To this recommendation I owe it that I was allowed to make important additions to the museum, during my late visit to Europe, among which the most valuable is the purchase of the collections of fossils of Professor Braun in Heidelberg, by which we have received the first series of specimens with authoritative labels, bringing with them part of the tradition of our science to our new establishment.

While the building was erecting, and many years before, as far as the insufficient accommodations I had, would allow, the specimens which were accumulating from every quarter of the globe, were undergoing a careful examination and submitted to a critical identification with the view of having them ready for exhibition, as soon as circumstances would permit. The arrangement of many hundred thousands of specimens was no easy task. In fact, I could never have undertaken it alone. But I had, as professor, to train young men intending to be professional naturalists, and I availed myself of this circumstance to advance the work of the museum, by adopting a method which has proved successful. The real advancement of a student does not consist so much in a general knowledge of every branch of natural history, as in a searching study of some special branch of his science combined with comprehensive views of the whole.

I therefore attempted to educate each of my students in a different branch of zoology, instead of uniting them into classes, and have thus prepared several good assistants, who have taken charge of the arrangement of the different parts of the collection now on exhibition; and it is but justice to them to say that they have acquitted themselves of their task in a manner which does them great credit. For the last five years, the number of students who have been so engaged, has varied from ten to twenty. I trust that the systematic catalogues which are now in preparation will afford further evidence that our institution is not only adapted for the purpose of general instruction, but likely also to send forth young men, who may contribute to the advancement of science. In order, therefore, to prevent misapprehensions and misrepresentations in regard to the importance and scientific value of our collections, I beg leave to make some remarks upon the organization of museums in general. This is the more necessary since, in many respects, ours will differ essentially from all the others thus far completed, and this difference will also explain the name it bears.

A zoological museum should contain every thing relating to the history of the animal kingdom; but in practice and owing to the circumstances under which our science has reached its present condition, zoological collections consist chiefly of adult specimens of the animals now living upon earth. The remains of extinct types found, as fossils in the strata forming part of the crust of our globe, are generally collected separately and arranged by themselves, or kept in distinct museums, and even united with the geological and mineralogical cabinets. This should not be, and every year makes it more urgent that the collections of fossils should be combined with those of the animals now in existence, as they can not be accurately identified without a direct comparison with one another. Some of the most mistaken views now prevailing in our science would long ago have been abandoned, did the great museums now existing, contain such combined collections of fossil and living animals.

It has been my aim throughout the arrangement of our museum, to keep this state of things in mind, and to force upon every visitor a direct comparison of the fossil remains with their living representatives, though this arrangement is not yet completed for all the classes of the animal kingdom.

Another novel feature in the museum soon to be carried out, and for which a large number of preparations have already been made, will be the exhibition of embryological series to illustrate the correspondence existing between the successive changes in the growth of living animals and the order of succession of the representatives of past zoological ages.

This will save us from the necessity of remodeling the whole at some future period, as I conceive other museums will have to do, or be left behind. I may add, also, that special collections to illustrate the geographical distribution of animals have been prepared, some of which are already on exhibition. A museum founded upon a comparative study of living and fossil animals, in connection with their embryonic changes and their geographical distribution, could no longer be called simply zoological museum; ours is a museum of comparative zoology, and the law has already sanctioned that name as the only name by which it shall ever be called.

In Europe, every university has its scientific collections, generally limited to the wants of the professors in their courses of lectures, and therefore more or less extensive and arranged with more or less care in proportion as the teachers themselves are more or less eminent in their scientific attainments. Besides these

university museums, there are scientific collections in most of the large cities, the best of which are in those capitals which are at the same time the seat of universities, as Berlin, Vienna and Munich, with which Frankfort may compete, though it has no university.

Above all these stand the Jardin des Plantes and the British Museum, both on account of their extent and their scientific importance. And yet it should not be forgotten that now and then private individuals have succeeded by an exclusive devotion to some one special subject, in making special collections unrivaled by the great public museums. Such is the collection of shells of Mr. Cummings in London, and such was the collection of birds of Temminck before it was incorporated in the museum of Leyden.

Now I can fairly say that we have outrun all the museums of the European universities, excepting those placed in large capitals, and that among these we would probably occupy the ninth or tenth place, but that we are still at an immense distance from the two greatest museums now existing; even though for the class of fishes I am sure we have only two superiors, and probably none for that of Reptiles and Corals.

Measures which have been taken recently by the board of trustees, guaranteed to us for all time to come the position I have here assigned to our museum, even though the immediate consequences of these measures may be a temporary embarrassment of our institution, or even a temporary suspension of its active operations. They have wisely chosen permanency in preference to a brilliant and perhaps ephemeral career. It was decided at the last meeting of the board of trustees, that the state grant of \$100,000 shall be funded. This step will eventually secure to the museum an annual income of \$9,000, including \$3,000 from the Gray fund.

The drag which weighs us down now is in the accumulation of specimens not yet arranged, which to prepare for future exhibition will entail upon us an expenditure of between \$12,000 and \$15,000. But whatever may come, we shall stand permanently in a position which we may be proud to have won in less than two years. If we have not at present the means of gaining new advantages over other museums, I can also say that there exists no museum which is sufficiently endowed to gain upon us.

At this moment our museum is more than sufficient for all educational purposes, for I do not believe that there exists outside of the large capitals of Europe, a university provided with a better apparatus to teach zoology, and as you know few of the European universities are in large cities.

But scientific collections are not simply made to afford the necessary facilities to students: they should also be sanctuaries in which science itself is advancing, in which new knowledge is obtained by original researches, and which by their very perfection should be a standard measure by which to test the scientific culture of a country.

Now, gentlemen, the position of men of science in this country is not what it should be. I do not say that they do not enjoy all the privileges of all other citizens; they do enjoy them fully, the recognition science receives among us is gratifying in the highest degree.

If you will free your best men from that tantalizing position, raise your scientific institutions to a level with the foremost in Europe, that the American man of science may, like the American freeman, have the satisfaction of knowing, when revisiting the Old World, that he is backed by the institutions he leaves at home.

In so doing, you will gain another advantage—that of freeing yourselves from the importunities of those pretenders in science who surround themselves with a fictitious reputation, made up of newspaper articles, and supported perhaps by a correspondence with some tenth-rate scientific men in Europe, whom nobody knows in their native country.

The founding of scientific institutions of the highest class is a worthy object for the ambition of an enlightened nation, and such institutions should be supported merely on the ground that they are an unmistakable sign of a higher culture. It is to science the world is indebted for a growing insight into the forces of nature—to it we owe the first glimmerings of the light illuminating the plan of the recreation.

The revelation which is dawning upon mankind from the study of the phe-

nomens of nature can not fail to bring his intelligent children nearer to their Creator. What more elevating inducements could be mentioned to foster such studies? And America has a rising generation of scientific students eager to enter into the race for the advancement of knowledge. Let the community give them such institutions of learning as our age demands them, and they will repay their fellow-citizens by covering their country with scientific glory.

The means wanting to reach such a result are few and simple: encourage scientific explorations in every part of the world, provide for the means of publishing the results so obtained, secure to your country the scientific collections of eminent men whom unfavorable circumstances may induce to part with their dearly earned and precious harvest of specimens, and never leave a useful undertaking to languish from want of support. To my young friends I would give a last advice: be industrious, be patient, and do not snatch at a crown before you have fought and won your battle!

## ADDRESS OF GOV. BANKS.

The original and somewhat restricted object indicated by its designation as a Museum of Comparative Zoölogy, even if confined in its action within the limits suggested by the title, opens an extended theater for self-sacrificing labor and elevated ambition.

To investigate and determine the circumstances and conditions of animal life; to dissect and compare the organs, through the agency of which animals exist; to trace their effect upon the habits, capacities and destiny of the creatures themselves; to arrange them in groups upon principles of similarity of structure and function; to ascertain the laws that regulate their distribution over the earth's surface; to show the services they render and the uses they subserve in the general economy of nature; their adaptation to purposes, and their possible contribution to the necessities and luxuries of domestic life; their importance to commerce, manufactures and arts; and the advantage of this species of knowledge in every department of education—these things certainly constitute a branch of natural science that challenges attention, that justifies labor, and compensates for great individual sacrifices and large public expenditures.

But the name of the institution, I apprehend, but faintly indicates the purposes or the expectations of its founders.

It has a broader aspect than brick walls, scientific collections, or legislative charities suggest. In imagination, at least, I see rising before me a structure of such harmonious outline and magnificent proportion, that its avowed purpose hardly covers the threshold.

Instead of guarding the domain of zoölogical inquiry, it must penetrate and subdue the three kingdoms of animal, mineral and vegetable creation; and every step in its progress will mark the bounds of original attainment and discovery, in these allied existences, though it may not gather or preserve all its evidences of research.

Whatever exhibits life, whether in the dulllest form of vegetable creation or in the animating subtleness of sense and intellect, must attract its attention and receive its knowledge.

To suggest life as the subject of contemplation and research, whether of organic or inorganic form, is to summon the faculties of man to the noblest, though it may be a fruitless investigation, comprehending the animate and the inanimate, the material and the immaterial, the finite and the infinite, the beginning and the end of all things.

From contemplation of a subject so far-reaching and vast, the mind instinctively shrinks from expectation of compassing an end. Beginnings in this inquiry exhaust the subtlest powers of observation and analysis, and like Hunter, the scholar, the philosopher, the Christian, is content that he does not altogether comprehend the immaculate scheme. "Life," he said, "is a property we do not understand—we can only trace the necessary steps leading to it."

This is the grand object of natural science. It is the great cause to which our museum is dedicated. It is a pursuit that exhausts the highest capacity and satisfies the noblest ambition. "We trace the steps leading to life," might well stand as the motto of the naturalist, the statesman, the philosopher, the Christian. How infinite in scope, how exhaustive of human power is the inquiry. The full real-



ization of the divine purpose exemplified by a perfect comprehension of the gradual and systematic development of the steps leading to life, would be as if some human being, coeval in existence with twice itself, were permitted to follow the courses of the ages, independent of the conditions that run with the destiny of mortals, and by presence and suggestion instruct the successive generations of men in the laws of organic and inorganic being, in the mysteries of animate and inanimate existences.

What indifferent spectator, that to-day examines the yet imperfect collections, some of them too minute for the unaided vision; who that has acquired an interest by contributing to its foundation; who that comprehends the genius and purpose of its master, or shares in the enthusiasm imparted to his followers, or the love of labor inspired by his example, can doubt that some addition to that already known, some explanation of a mystery imperfectly understood, some correction of an error received as truth, some new discovery of the necessary steps leading to life, will be achieved, or the wisdom of that popular impulse which has planted this new organism for the diffusion of useful knowledge?

It is not my purpose, neither is it in the line of duties assigned to me, to set forth the technical advantages to be derived from the study of natural science. That has been already done by one who both comprehends and illustrates the stern brevity of logic, with harmony of expression, felicity of illustration, and a ravishing accent, musical as is Apollo's lute.

My duties are completed if I but call attention to the incidental advantages to be derived from this institution.

It is hardly to be denied—and it were scarce an advantage if denial were possible—that a feeling is creeping upon the minds of men and scholars, not merely of indifferent but interested men, that our methods of school and collegiate instruction are not in all respects best calculated to develop the superior qualities of body, mind, or conscience. It is a problem as ancient as civilization, whether acquired or native powers are more valuable, and the policy and theory of education or non-education are sometimes made to depend upon suppositious advantages of one or the other of these powers. A similar diversity of opinion grows out of what is called self-culture, as compared with that conferred by educational institutions; or, in other words, that which comes early in life, with most favored opportunity, or that which comes limping later, with such advantages only as accident vouchsafes.

It is error, in my judgment, that identifies education exclusively with acquired information, or contrasts acquired capacity with natural powers, as evincing the utility or non-utility of scholastic institutions.

That man may misapprehend its nature and abuse its privileges is apparent. To regard mere acquisition of fact, the treasures of attainment as education; to seek the culture of the mind at the sacrifice of bodily vigor; to estimate memory as the equivalent of the powers of observation, analysis and the faculty of reason; to consider, because a young man has won collegiate honors, and is therefore qualified for every pursuit of life, useful or ornamental, that he is for that reason disabled for any pursuit, except a few overcrowded professions, is both to misapprehend the nature and abuse the privileges of true education. But these things, so common among us; so correctly demarcating the line between what is called self-education and other education, if such a thing were possible, are no more the result of a true system, than—to borrow a bill of fare from Emerson—"the flesh of dried grass, and the broth of old shoes," constitutes high living.

The error, rather of practice than of theory, is that we identify education with attainment, and rely almost exclusively for instruction upon the contents of books. It is assumed that students know something because they are taught that other men know something. Men think they see, when in fact they are only looking on.

If the acquisition of facts were the exclusive object of education, books would be a safe reliance, provided that the first men were authors. But in our age, the first men make newspapers, steam engines, arguments, street railways; they plant cities, command armies, give new powers to empires, solve problems of life and death, have little time to read, much less to make books.

I welcome the creation of the museum, because it opens to its students the book of nature. Reading and writing are important to them because they are enabled thus to ascertain what was known before them, and to record their own dis-



coveries and additions to the stock of human knowledge. Observation and comparison are their reliant powers. When a student contemplates a naked stone placed in his hand until he is able, by study, to discover its laws and analyze its character, new faculties of mind are given him, which our theories of education rarely or never contemplated.

Mr. Kohl tells us of a picture in one of the Florentine galleries, which represents a monk seated in one of the cells of a monastery, intently gazing upon a black letter volume, his hands resting upon its pages. Not a ray of light makes darkness visible, until, from intensity of study alone, from his finger's end gradually breaks a faint glimmer, which gradually strengthens, until the black letter page returns the reflection, the folds of his garment become translucent, and the cell is filled with the light of his intellect.

This is education—the education of the faculties. It proceeds from the student to the work, and does not come from the book to the man.

An institution in which this theory of instruction is daily practiced, which is frequented by students of the university and teachers of the public schools—which can not fail to become the model of scientific establishments on this continent, and will equal, if it does not surpass, the renowned museums of Europe—must renovate the customs of other institutions, and contribute to establish the true theory of mental culture.

Its pupils—like Humboldt and Agassiz, Fremont, Arago and Bache—will become a part of the scientific and intellectual development of the age, and each become in his time a type—

"The first fiery soul  
That makes a low name honorable.  
They who take it by inheritance alone,  
Adding no brightness to it,  
Are like stars seen in the ocean,  
That were never there but for  
Their bright originals in heaven."

From such a system of education, pervading families as well as schools and colleges, we may hope to attain the highest advantages of popular intelligence—accustomed to contemplate the subtleties of nature, which, as Lord Bacon says, "so far exceed the subtleties of sense and intellect;" our scholars will avoid the errors of the scholastic age, and our people escape the quicksands of prejudice and error that have swallowed so many of our predecessors.

Our reliance is in the virtue and intelligence of the people, and not in constitutions nor in schools, nor in great men, alone.

Rome had her orators and her statesmen. Greece had her academies of learning and her schools of philosophy. Erudition poured forth her treasures to the multitude in the groves and the public walks. Philosophy unburdened her mind of its richest stores, in the streets and in the forum. The great of the age, Homer, Demosthenes, Cicero, Cæsar, answered in person the many-voiced call, and spoke face to face with the giant multitude. They had their constitutions and their laws, whose theoretic simplicity won the emulation of ages. The sister arts, poetry and painting, music and sculpture, hand in hand with the lore of the schools, and the progress of the sciences passed from perfection to perfection, approaching the standard of ideal excellence and transcending the fame of after ages. Yet Greece and Rome as free governments, lasted but for a day. The fair form of a fictitious republic arrayed in the panoply of freedom—adorned by the elegances of the arts, and protected by the supernatural powers of their philosophy—could not long withstand decay. The frail but beauteous vesture could not hide her mortality. The edifice had no sufficient foundation. The vesture of the people—the soul—was wanting. Who does not pray that America may escape a like desolating end? Who does not welcome an institution, in the benefits of which so many participate, that opens new avenues, and new methods for the discovery of the truth.

One word is due to personal character. Fourteen years since, in the autumn of 1846, a stranger reached the shores of America. He had been the pupil of the first naturalists of Europe; the companion of its first men of science; the loved friend of Cuvier and Humboldt. The zoöphytes of the coral reefs, the marine animals of European seaboard, the summits of the Alpine glaciers, knew him well; and all, alike with philosophers and rulers, echoed his fame.

His mission here was to make himself familiar with the natural history and geology of this continent, upon a suggestion of Humboldt, and under the patronage of the king of Prussia.

He instantly identified himself with the scientific history of America, as before he had been a part of that of Europe. He imparted to lettered and unlettered men a taste for abstruse science. He gathered, through their aid, the scientific treasures of the continent to himself. He created the museum we propose to inaugurate, and what is the most important act of this day, he dedicates himself, his genius and his labor to its progress, until it shall surpass every scientific institution of this continent, and equal any in the world.

As president of the board of trustees, by virtue of the office I hold, one of the most satisfactory acts of my administration, in the name of the trustees representing the commonwealth, the university, and the donors, in the presence of this assembly, I dedicate the museum to his uses and the cause of natural science!

May it enlist the continued support of the wise and the affluent! May it promote learning, and strengthen Christian faith! May it honor the cause of science, the commonwealth of Massachusetts, the institutions and people of America.

The audience were dismissed with a benediction invoked by Rev. Dr. Peabody.

## XVI. EDUCATIONAL MISCELLANY.

## NEW AIDS TO THE STUDY AND TEACHING OF GEOGRAPHY.

THE recent appearance of a new series of Descriptive, Physical, and Historical Maps, drawn by Mr. Geo. Schroeter, Chartographer of the American Geographical Society, is perhaps not unknown to most of the readers of this journal. The merits of this series are, however, so extraordinary, the maps being so great an advance upon all previous efforts at geographical delineation in this country, that we have deemed it our duty, as the chroniclers and promoters of educational progress, to present an extended notice and description of them. We believe this to be due not only to the cause of sound learning, but to the accomplished geographer, who has designed, and the enterprising publishers,\* who have brought out in such artistic style, a collection of earth-pictures destined to revolutionize a very important department of instruction in our schools of all grades. As a somewhat elaborate notice is here attempted, the subject will, for the convenience of the reader, be treated by topics which will be definitely announced.

## WHAT IS GEOGRAPHY?

It is, by most compilers, defined to be a description of the earth's surface, and, as it is treated in our current popular text-books, this description is limited almost entirely to meager details of political divisions, with a smattering of social and historical statistics, without significance or value to the learner. It has been the bane of popular geographical instruction, that it has been addressed to the memory almost exclusively. It has not descended to the *causes* of the multitudinous facts presented, nor has it searched for the momentous consequences of the physical structure of the earth's surface. It has not seized "those incessant mutual actions of the different portions of physical nature upon each other, of inorganic nature upon organized beings, upon man in particular, and upon the successive development of human societies. In a word, it has failed to consider the reciprocal action of all those forces, the perpetual play of which constitutes what may be called *the life of the globe*." It has forgotten that the earth is the abode of man, that it sustains relations to man, and man to it, and hence it has, as Guyot expresses it simply, "coldly anat-

\* P. Reid & Co., No. 264 Canal-street, New York.

mized the globe, by merely taking cognizance of the arrangement of the various parts which constitute it.

The earth is the grand theater of all man's actions, it is the platform whereon the great problem of human development and civilization is to be solved. And since the Creator has placed humanity upon it for this purpose, it is evident that he has *adapted* it to the part it was designed to play in the accomplishment of His all-wise purposes. If this be so, then the study of the earth, or Geography, it is manifest, should deal not only with surface descriptions, but with structure, with causes, with consequences. It should analyze, interpret, compare. It should seek to know the influence of structure and physical phenomena upon vegetable and animal life, and, in short, it should aim to learn how the earth and its manifold forms of life, both organic and inorganic, are calculated to promote the civilization and happiness of the race. It should strive to teach man how to use these wise provisions of the Creator, so as most effectually to secure the end for which both they and he were created.

#### A FEW PERTINENT EXAMPLES.

It is well to know the boundaries of a state or a kingdom, but it is far better to superadd to this knowledge the relations either political or physical which determined those boundaries. It is not generally understood even among teachers, and much less among the masses of the people, that the limits of political divisions are in most cases determined primarily by physical considerations. And yet, this is a fact full of instruction. A well-constructed map, one which superadds to the mere forms of contour, a proper expression of the physical structure, is all that is needed to prove this fact to a careful observer. And how can we interpret the great evolutions of history except in the light of the physical as well as political causes which generated them? In fact, physical relations often themselves become the germs of political causes. The presence of a gold mine may lead to the conquest of a kingdom by a covetous neighbor, and hence to an entire change of its territorial limits. In the laying out of states, what more than the presence of rivers, lakes, and spurs of hills, or a range of mountains, determines the question of boundary?

It is useful to learn that rivers abound in a given country, and that these rivers rise at certain points, take certain directions, and pour their waters into certain reservoirs. But it is vastly more useful to inquire how those rivers came to be there, and what great purposes they subserve, both in the economy of nature and in the operations of commerce. Of what worth is it to teach that a mountain chain stretches here, or that a vast plateau spreads its monotonous surface there, without a further knowledge of the influences which these great

structures exert on climate, on production, on animal life, and hence on the life of man! Why should it not be known universally, that these are the great refrigerators and condensers of our planet? Why should it not be a common-place knowledge, that an altitude of no more than 350 feet makes a difference of one degree in the mean annual temperature? An altitude of only 1,600 feet almost completely changes the character of the climate, soil, productions, and hence of the people of a locality. There are abundant examples of this pregnant fact all around us. Compare the climate, soil, productions, and people of New Hampshire or Vermont, with those of New Jersey or Delaware. Compare New York and Pennsylvania with Georgia and Alabama. Or, what is more striking, compare New England with the Western States in the same latitude.

OCEANIC INFLUENCES.

Is it more important to know that, between the old and new worlds, two vast oceans, the Atlantic and Pacific, stretch their broad bosoms, that they are respectively, three and ten thousand miles wide, and that the waters of both are highly charged with salt, than it is that they are instinct with life, that restless currents sweep over them in nearly all directions, modifying the climate and productions of immense territories, facilitating or obstructing the commerce and intercourse of nations; that between these and the atmosphere, in currents, there are striking coincidences in form and direction, and that by their mutual play the purity and healthfulness alike of air and sea are preserved, and thus they move majestically and ceaselessly on, freighted with priceless blessings to man!

These few examples and contrasts are perhaps sufficient to show the absurdity of prevailing methods of geographical instruction, as well as to indicate that higher views of the grand relations existing between the "earth and man," which should be the central thought in all our studies in this department. It is manifest that geography, pursued in the spirit here indicated, which is the spirit of Humboldt and Ritter, would become not only one of the most attractive, but one of the most sublime and elevating, not to say useful studies in the whole range of scientific inquiry.

WHY HAS NOT THIS METHOD PREVAILED?

The chief obstacle to the prevalence of this method heretofore has been the want of the requisite aids coming within the reach of all. Our maps have been too strictly confined to superficial details. They have been inaccurate, out of proportion, devoid of physical representations, badly colored, drawn on irregular scales, or no scale at all, thus rendering comparison impossible. To study the earth with all its vast organs, so to speak, to investigate it in the light of its sublime and

varied phenomena, it is requisite that we should possess ourselves of truthful likenesses, that we may seize upon these phenomena as if by proxy, and hold them in our grasp till we can properly observe, compare, and characterize them. The field is so vast, and the range of our vision is so limited, that there must needs be reduction, and this reduction must be so skillfully performed as to preserve all the essential truthfulness of the original.

#### DESCRIPTION OF THE INDEPENDENT SERIES.

These maps are engraved, and printed on fine white cambric. The coloring is rich and harmonious, striking the eye most agreeably. The outlines, and all the physical features, such as the mountain ranges, the river systems, and the desert regions, with the range of the different varieties of animal and vegetable productions are presented in bold relief, and thus well calculated to strike and impress themselves upon the mind of the student. The scale upon which they are drawn is uniform, so that we see not only the continental masses, but all the natural features, both of land and water, as well as the political divisions, in their actual relative proportions as to size and form, thus rendering the study of comparative geography possible and practicable. Associated with the maps there are well-executed profiles, admirably colored, and on the same scale, exhibiting the reliefs of the earth, the mountain masses, the plateaus, the table-lands, and the valleys in their relative elevations above the sea-level, thus affording ample means for the study of the physiology of the great terrestrial forms, and their influences upon the life of the globe.

The maps may be folded, and the entire series can easily be compressed into a space so small as to occupy an ordinary table-drawer. Being of cloth exclusively, they are very durable, and will last for twenty years. The coloring being in oil, the maps may be washed in soap and water, without the least disturbance of the colors. In a word, they comprise, in respect to mechanical execution, artistic finish, and scientific accuracy, all that the most ardent lover of geographical researches could desire, in the way of school aids in this department.

#### PARTICULAR DESCRIPTION OF THE MAPS.

We begin with Europe, because it is the smallest of the series, and may be regarded as the unit of comparison as to size. This map occupies a space of eighteen square feet, being four and a half feet long and four feet wide. The coloring is peculiarly brilliant and rich, greatly relieving the outlines of the complicated tissue of political divisions which make up this interesting continent. The river systems and mountain chains are delineated in a style so bold and distinct, that to see is to believe. They are in striking contrast to the ill-defined and inaccurate representations of common maps.



The northern limit of the vine and of grain, the lines of the annual temperature of the freezing point, and the southern limit of polar ice are distinctly shown, and add much to the interest of the pupils' research, as into the structure and history of that continent, which plays so important a part in the march of civilization.

There are two sets of profiles exhibiting the reliefs, accompanying the map of Europe. Three of these sections run from east to west, and the remaining two extend from north to south, and together they afford the most complete view of the continent, its form and structure, ever afforded to the student of geography in our country.

Of the east and west sections we have the northernmost on the parallel of  $60^{\circ}$ , extending from the Shetland Islands eastwardly, to Mt. Konjakoski in the Ural range, and passing through the highest peak of the Scandinavian hills, elevated about 5,900 feet above the level of the sea. There is almost an uninterrupted level from the eastern base to the plains of Northern Russia, in longitude  $32^{\circ}$  east. From this point the great plain referred to, which is about 1,000 feet above the sea-level, extends to the Urals, with but little variation in the elevation of the surface.

The second section runs from Land's End eastwardly along the parallel of  $50^{\circ}$ , through the English Channel, touching the northern plains of France and Belgium, cutting the Erzberige and Sudetes, and passing through the immense plains of Galicia and Southern Russia, terminating at the Caspian sea. The highest peak of the Carpathians is shown in perspective in the northern distance. The next and last of the east and west profiles, stretches from the Azores through the Sierra de Estrella of Portugal, the Spanish plateau, on which rests the city of Madrid, and the Mediterranean, cutting Minorca, Sardinia, the Italian Apennines, Turkey, and the plateaus of Asia Minor, with the towering summits of the Caucasus in the distance.

The longitudinal sections connect, 1st. Cape Matapan in Greece, with the North Cape, affording us beautiful views of Mts. Elias and Parnassus in Greece, and the Balkans in Turkey, and Transylvania, stretching across the immense plains of Poland, Finland, and Lapland; 2d. Gibraltar on the south, cutting the Pyrenees in Spain, the Alps in Switzerland, and the Carpathians in Austria, thence stretching far away over the plains of Central Russia, to the base of the Ural Mountains on the Siberian boundaries.

The sublime contrasts so vividly presented by these alternations of mountain, valley, and plain—the vivid pictures presented of the great terrestrial masses, leading the student to an investigation of their functions and uses in the economy of nature, and their relations to climate, productions, animal life, and the development of man, can not fail to impart a charm to geographical studies, heretofore unknown in the history of our schools.



## ASIA AND PROFILES.

Asia, the largest and the most interesting of the five great divisions, is here represented in a style worthy of her grandeur in physical structure, and of her distinction in the march of history. Asia was the cradle of the race, and, save the single family which was borne aloft on the world of waters, proved also to be its grave. For thousands of years she was almost the only theater upon which the drama of human history, with its multitudinous scenes, events, and characters, was being performed. It is also the abode of all that is vast and sublime in physical structure; of all that is varied and beautiful in animated nature; of every thing that is "pleasant to the sight and good for food." Properly to represent her, therefore, in these great characteristics, is worthy of a truly noble ambition. Accordingly, Mr. Schroeter has given us two pictures—the map proper, occupying nearly fifty square feet, and a series of seven grand profiles, covering about twenty square feet. These graphic earth-pictures it is difficult, and hence hazardous to attempt to describe. No word-pictures can do them justice. To be appreciated, they must be seen.

Passing by the delineations of the merely descriptive or rather political characteristics, it may be stated generally, that in boldness of outline, and in harmony and beauty of coloring, this map is thus far the gem of the series. Placed at a distance of thirty or forty feet from the pupil, it serves the purpose of an admirable outline, in which all the minute details are lost in the distance. But when within ten or fifteen feet of a class, it presents an immense mass of instructive physical facts, of the most varied and interesting character. Beginning on the north, we have the polar ice-fields, exhibiting the distribution of the frozen masses in all their gradations, from the closely formed "pack," to the floating bergs, wending their lonely way to more southern climes. Next we observe the almost endless plains of Northern Siberia, stretching away for thousands of miles, and studded here and there with deserts, whose peculiar character is indicated, in the drawing, by the difference in delineation, showing whether it be of the silicious or woody description. Approaching the southern border of this mysterious land, the magnificent series of mountain-chains, and the succession of vast plateaus, which distinguish Asia above all other parts of the earth, begin their majestic marches. First, there is the chain of the Altai, whose highest peak, Bjelucha, is 11,000 feet above the ocean. This is immediately succeeded by the plateau of Dzonugary, 1,300 feet; the Thian-Shan chain, Mount Bogdo-vola, 18,000 feet high; the Desert of Lop, and the northern basis of the Quenlun, the former 2,000 and the latter 5,000 feet high; the chain of the Quenlun 21,000 feet; the plateau of Katschi and

Tibet, 11,000 and 14,000 feet, and finally culminating in the great Himalayan chain, 1,400 miles long, whose highest peak, Dhaulagiri, towers to the immense altitude of 28,070 feet, or more than five miles above the sea-level, being the highest point of land yet discovered upon the globe. Nothing can exceed the boldness, distinctness, and beauty with which these mountain ranges are delineated. Great reliefs as they are upon the otherwise monotonous plain of the terrestrial surface, they stand out upon this map with a vividness almost rivaling the reality in nature. The northern range of the camel, the northern limit of palms, of grain, and of trees, the circuit embraced within which the eruptive effects of the volcano Tombora in the island of Sumbarva were experienced is defined, and the great Chinese Wall, and other interesting historical physical facts are presented to relieve the monotony of mere descriptive details. But it is not until we survey the profiles which accompany this splendid map, that the grandeur of the physical forms which characterize this part of the world is fully revealed. Of these profiles, four extend in an east and west direction, while the remaining three are longitudinal. The first section begins at Mount Obdors, in the Ural chain, and, following the Arctic Circle, terminates at East Cape, in Bhering's Straits. From the base of the Urals to East Cape, there is an almost uninterrupted plain. The second section opens at the Ural river, in latitude  $50^{\circ}$ , on the west, cutting the steppes of Kirghisz and Ishim, the Altai mountains, and passing through Mongolia, Siberia, and Mongooria, terminating at Cape Lopatka. After leaving the steppe of Ishim, the surface assumes an undulating shape, the mountain summits reaching an elevation of from 5,000 to 15,000 feet.

Profile number three, commences at the Dardanelles, cutting Mount Ida, 5,400 feet in height, Mount Olympus being in the distance, and passing along the 4th parallel through Asia Minor, the plateaus of Armenia, with Mount Ararat in the distance, 17,300 feet altitude, the Caspian sea, 38 feet below the level of the ocean, thence rising through the desert plateau of Turkistan to the lofty summits of the Bolordagh, 18,000 feet, and finally passing through the vast steppes of Chinese Tartary, the peninsula of Korea, and the island of Nippon, of the Japanese group.

In the fourth section or profile we have exhibited in a more striking form than in any other, the characteristic structure of this vast continent. The section commences at Suez, on the west, and terminates at Shanghai on the east, running along on the parallel of  $30^{\circ}$  north. It is here that the grand contrasts presented by the immense plains of Arabia, Persia, Afghanistan, Northern India, and China, with the multitudinous summits of the Himalayan range shooting up to an altitude of 27,070 feet, most strikingly appear. This section not only

gives us the fascination of vast heights and distances, such as are to be found nowhere else on our planet; but it affords us an admirable illustration of what is understood by the "backbone" of a continent. Words are inadequate to describe even the *fac-similes* as presented by these splendid views of nature in her "grandest moods." To approach even a faint conception of the reality, these pictures must be seen and studied. By their aid we may obtain some idea of the sublime emotions experienced by Humboldt and his companions, while surveying those majestic "hills, rock-ribbed, and ancient as the sun."

Which, as the poet sings, are the solemn decorations of the great tomb of man;

The final east and west profile begins at Mecca, in Arabia, and extends along the twentieth parallel to the Gulf of Tonquin. We are thus afforded a view of the great desert of Robar or Rhali, in Arabia, which is elevated to a height of 6,000 to 8,000 feet above the sea. The line thence passes across the Arabian Sea to Bombay, cutting the western Ghauts, the plateau of Deccan, the eastern Ghauts, the Gulf of Bengal, and the high summits of farther India. This section affords some fine contrasts of desert plains, elevated plateaus, and lofty mountains alternating with stretches of sea and gulf, and indicating great variety of structure, as well as of climate and productions.

The two remaining profiles follow the direction of the meridian, the westernmost connecting Ceylon with the mouth of the great River Ob, in Siberia, in longitude 80° east from Greenwich. The more easterly commences at the Straits of Sunda, and running along the 105th meridian, terminates at Cape Cheluskin, in the Arctic Sea. By the aid of these two profiles, the student is enabled to obtain an accurate idea of the great laws of relief, which in Asia are most strikingly illustrated in a longitudinal direction. As we study the important physical facts so boldly and beautifully presented for contemplation in these sectional profiles, our only wonder is that we have been content to grope about in darkness after the truth so long and so patiently. Certain it is, that since the means of gaining a higher conception of the vastness and grandeur of the physical forms which gem the surface of our planet are now and here afforded us, they will hereafter be deemed indispensable to the rational pursuit of geographical studies, and they must become the common inheritance of every institution of learning, claiming to be respectable, and aiming to meet the demands of our time.

We content ourselves with this imperfect notice of the admirable series of Mr. Schroeter. Time and space will not permit a full description of each map, and we have chosen Europe, the smaller, and Asia, the larger number of the set, as presenting a fair average of the merits of the whole.

This paper can not be more appropriately closed, than by giving the subjoined brief abstract of the author's views in regard to the necessities of such a series of geographical representations as is demanded by the nature of the subject, and the wants of a rational system of school instruction :

"The construction of school maps, as an important medium of education, has not attracted the attention of the scientific world as much as the subject deserves.

"1st. The maps should be large and freed from lettering; such can alone possess the advantage of giving true and bold pictures, undisturbed by any thing not in conformity with nature. A great many facts of physical and political geography cannot be explained on the small maps of a school atlas.

"2d. It should always be remembered and shown in the projection, that part of a globe is represented, and the projection should be accurately computed according to this principle, and no attempt should be made to suit the convenience of the compiler.

"3d. As much detailed information as possible should be given, so that the endless variety of nature may be indicated, and the child thus induced, with the assistance of the teacher, to form an opinion, by his own judgment of the general types and ruling laws. Facts should serve as a foundation for general definitions, and not be mutilated to harmonize with glittering generalities.

"4th. A sound judgment, based on science and philosophy, should direct the selection and arrangement of such detailed information.

"5th. The execution should be bold and distinct, performed with artistic taste and skill, so as to make the maps approach the effect of a picture.

"6th. Coloring, too often neglected, should be carefully arranged and tastefully executed. The impression of colors on a child's mind exceeds in duration and intensity, by far, that of monochromatic drawings,—which fact should be taken into consideration.

"7th. They should be so constructed as to enable the teacher to use any of the numerous excellent text-books published, and not be dependent upon any particular system.

"8th. A uniform scale should be adopted for the corresponding maps; the utility and necessity of this will be apparent to all practical teachers.

"9th. Judiciously selected and executed profiles (of a uniform scale), illustrating physical geography, should accompany each map."

In conformity with these principles, the "Independent Series of Outline, Descriptive, Physical, and Historical Maps" have been constructed by Mr. Schroeter.

The series consists of one set of seventeen maps, averaging about thirty-six square feet, and a smaller set of ten maps, averaging about nine square feet.

W. F. P.

## EDUCATIONAL USES OF THE STEREOSCOPE.

The command which man is acquiring over nature is one of the remarkable features of our time. He is penetrating into her secret processes, and learning the laws and methods of her workings, with a success that outrivals the dreams of the alchemists. From year to year, he is drawing her mighty power into his service, and making her to achieve for him results that seem almost magical. He binds down steam to be the drudge in his workshops; he makes electricity his messenger from continent to continent; and now he is constraining the light to be his draughtsman, and to sketch with an ethereal pencil, all that is most beautiful or sublime in the outward world. The Daguerreotype in its various modifications, catches and makes durable the ever-changing expression of the human face, the landscape, and whatever is most striking in nature; and now comes the Stereoscope, and in the words of Sir David Brewster, "reproduces in all their roundness and prominence the objects and the scenes themselves." This is the characteristic of this wonderful instrument, that it gives the solidity of nature to whatever it represents, so that we see it, not as on a plane surface, as in pictures, but *standing out* with life-like distinctness. It is especially adapted to sculpture and architecture, which it has the power of bringing before the eye with the utmost exactness and vividness. Nothing can be more true to nature than such views as the Ruins of Karnak, the winter scenes at Niagara, (which in their icy fixedness are more like architecture than landscape,) and the Statuary of the Vatican. It is the best substitute hitherto discovered, and we might almost say that it is the best possible substitute for foreign travel; and it enables us to fill our parlors and our schools with the noblest treasures, both of Art and Nature, and study them at our leisure, coming back to them, from time to time, until we have mastered every feature, as no traveler on the wing can do.

As a help in our schools to the study of Geography and History, and the rudiments of the Fine Arts, it seems to us invaluable. It will give a far more accurate knowledge of localities, buildings, statues, &c., than any mere verbal description can ever do; while as a means of educating the mind to the appreciation of the beautiful, it can not but be very useful. From the map to the globe was a great step; then to maps and globes with raised surfaces exhibiting the *contour* of the earth's face—its mountains and valleys and table lands; and now the Stereoscope supplies what was still lacking, and takes the separate objects and brings them before us in all the distinctiveness and prominence of reality and life.

These reflections on the Educational Uses of the Stereoscope are suggested by a recent opportunity we have enjoyed of examining a series of views selected from the immense collection of the *London Stereoscopic Company*, 594 Broadway. The pleasure and advantages of former travels have been renewed, the fading recollections of churches, palaces, monuments, and pictures, have been revived; and our knowledge of the "homes and haunts of genius," and of distant scenes and objects of art, of living persons, and the ruins of Ninevah, Egypt, and Palestine, which we have never had, and never shall have an opportunity of visiting in person, has been greatly extended by this quiet examination. Every house and every school should have a Stereoscope and selection from the views of this Company.

Instruments can be had, of any price; and as the views manufactured by different companies are all on the same scale, the same instrument will answer for any number of views. These last can be extended from year to year, as called for to illustrate different studies, and subjects of interest.

## DEDICATION OF THE EVERETT SCHOOL-HOUSE.

The new school-building erected on Northampton street, named the Everett School-house, in honor of that distinguished orator and friend of education, was formally dedicated on the 17th of September, by the usual exercises, which took place in the large upper hall of the building. This building, which is erected on a plan which does not differ materially from the other school-buildings, is finished and furnished throughout in the most perfect manner, and in all respects may be regarded as a model Boston school-house. The first floor over the heating apparatus is fire-proof, an improvement which will be adopted in regard to the houses hereafter constructed.

The platform was occupied by His Honor Mayor Lincoln and the members of the City Government, Hon. Edward Everett, President Felton, Hon. Robert C. Winthrop, Rev. Dr. Putnam, Hon. J. D. Philbrick, and others.

The exercises commenced with chanting "The Lord's Prayer," by the pupils. Rev. D. C. Eddy then read selections from the Scriptures, after which a prayer was offered by Rev. Dr. Burroughs. A commemorative song, written for the occasion by Mr. Rufus Leighton, was sung. Alderman Bailey, Chairman of the Building Committee, then delivered the keys of the school-house to Mayor Lincoln, who responded briefly to the remarks of Alderman Bailey, and then handed the keys to Mr. E. F. Thayer, Chairman of the local School Committee. Mr. Thayer made a few remarks and presented the keys to Mr. George B. Hyde, Principal of the Everett School. A dedicatory hymn, written for the occasion by Mr. Wm. T. Adams, was sung by the pupils. Mr. Everett was then introduced by the Chairman, and made the following address:—

## ADDRESS OF EDWARD EVERETT.

Mr. Chairman:—You will easily believe that I feel a peculiar interest in the occasion that has called us together. The dedication of a new first class school-house is at all times an event of far greater importance to the welfare of the community than many of the occurrences which at the time attract much more of the public attention, and fill a larger space in the pages of history. The house which we this day dedicate is to be occupied by a school which had already, as the Dwight school for girls, established an enviable reputation among the sister institutions. It is now, in consequence of the rapid growth of this part of the city, transferred, with the happiest prospects, to this new, spacious and admirably arranged building—a model school-house, fit for the reception of a model school. I hope, as a friend to education from my youth up, I should duly appreciate the importance of such an event; but you have kindly given me a reason—to the strength of which it would be affectation to seem insensible—for taking a peculiar interest in this day's ceremonial.

One of the highest honors which can be paid to an individual—one of the most enviable tokens of the good opinion of the community in which he lives—is to connect his name with some permanent material object, some scientific discovery, some achievement in art, some beneficent institution, with reference to which, by word or by deed, he may be thought to have deserved well of his fellow-men. Hundreds of towns and cities on the continent recall the memory of the great and good men, who, in peace and in war, founded and sustained the liberties and rights of the country. Science gives the name of the astronomer to the comet, whose periodical return he has ascertained. Botany commemorates her votaries, in the flowers, and the trees—the Kalmias, the Dahlias, the Robinias—which they first discovered and described. The fossil relics of the elder world are designated by the names of the geologists who first exhumed them from their adamantine graves; and we can not but feel that one of the strongest instincts of our nature is gratified by these associations.

But what are these lifeless, soulless substances, these mute, inanimate bodies in



the heavens above, or the earth beneath—the vaporous comet, the fading flower, the extinct animal, whose very skeleton is turned into stone—compared with an institution like this—a living fountain of eternal light, a flower garden planted in each succeeding year, with germs of undying growth; a nursery, beneath whose fostering wings so many immortal spirits shall be trained up in the paths of duty, usefulness, and happiness; and in which you permit me to hope that my poor name will be kindly remembered, as long as the schools of Boston shall retain their name and their praise in the land; and that I am well aware will be as long as Boston herself shall retain her place on the earth's surface; for as long as there is a city council to appropriate a dollar, or a treasurer to pay it, I am sure it will be voted and paid for the support of the schools. Devoted for a pretty long life to the public service, in a variety of pursuits and occupations, laboring, I know I may say diligently, and I hope I may add, though sometimes with erring judgment, yet always with honest purpose, for the public good, at home and abroad, I frankly own, sir, that no public honor, compliment, or reward, which has ever fallen to my lot, has given me greater pleasure than the association of my name with one of these noble public schools of Boston.

They are indeed, sir, the just pride and boast of our ancient metropolis, and it is with great propriety that you select the 17th of September for the dedication of a new school-house. As the corporate existence of the city dates from that day, so nothing can contribute more to its continued prosperous growth—to its perpetuated life—than the organization of one of these admirable institutions. What offering to our beloved city, on this its two hundred and thirtieth birthday, can we present to her more appropriate, more welcome, more auspicious of good, than the means of educating eight hundred of her daughters? Nor is it the birthday of our city alone. On this day, seventy-three years ago, the Constitution of the United States went forth to the people from the hand of the peerless chief, who, whether in war or in peace, commanded all their respect and united all their affection. The best, the only hope under Providence, that we may long enjoy, and our children, the blessing which it secures to us as a united, happy, and prosperous people, is in the intelligence, virtue, and enlightened patriotism of which these free schools are the great living fountain.

We are accused sometimes by our brethren in other parts of the country, and by our friends on the other side of the water, with being a little given to self-laudation. I don't think that the worst fault of a community, though it may be carried too far for good taste. But it implies at least the possession of something, which we not only ourselves think worthy of praise, but which we have reason to believe is held in esteem by others. For I really do not think we habitually over-praise the common schools of Boston. Not that they are perfect; nothing human is perfect. but I must think it as liberal, comprehensive and efficient a system, as the imperfection of human affairs admits. It aims to give to the entire population of both sexes a thorough education in all the useful branches of knowledge. If there is a class in the community so low that the system does not go down to them, it is for causes which no system, established by municipal authority in a free country, can overcome. In all cities as large as Boston, there must be some hundreds of unhappy children, such as those to whom I alluded last Saturday, (it makes one's heart bleed to see them,) whose wretched parents prefer sending them into the streets to beg, to gather chips, to peddle lozenges and newspapers, rather than to send them to school. But with reasonable co-operation on the part of the parents, the city does certainly, as I have said, provide the means by which a thorough education, in all the elementary branches of useful knowledge, may be attained by all her children.

The cost at which this end is obtained, bears witness to the liberality of the city. I perceive by the Auditor's report, that, for the last financial year, the expenditure on the schools, exclusive of school-houses, amounted to \$373,668.61; for school-houses, \$144,202.67, making a total of \$517,371.28—\$17,371 over a half a million of dollars for a single year, which I am inclined to think is, in proportion to our population, a larger expenditure for the purposes of education than is made by any city or people on the face of the globe.

The school-house, whose dedication we are assembled to witness, is for the accommodation of a girl's school; and this circumstance seems to invite a few words on female education.



## FEMALE EDUCATION.

There is a good deal of discussion at the present day on the subject of Women's Rights and her education. No one would be willing to allow that he wished to deprive them of their rights, and the only difficulty seems to be to settle what their rights are. The citizens of Boston, acting by their municipal representatives, have long since undertaken to answer this question in a practical way, as far as a city government can do it, by admitting the right of the girls to have, at the public expense, as good an education as the boys. It is not in the power of the city to amend our constitutions, so as to extend political privileges to the gentler sex, nor to alter the legislation which regulates the rights of property. But it was in the power of the city to withhold or to grant equal privileges of education; and it has decided that the free grammar schools of Boston should be open alike to boys and girls. This seems to me not only a recognition at the outset of the most important of Women's Rights, viz., equal participation in these institutions, but the best guaranty that if in any thing else the sex is unjustly or unfairly dealt with, the remedy will come in due time. With the acknowledged equality of woman in general intellectual endowments, though tending in either sex to an appropriate development, with her admitted superiority to man in fact, sensibility, physical and moral endurance, quickness of perception, and power of accommodation to circumstances, give her for two or three generations equal advantages of mental culture, and the lords of creation will have to carry more guns than they do at present, to keep her out of the enjoyment of any thing which sound reasoning and fair experiment shall show to be of her rights.

I have, however, strong doubts whether, tried by this test, the result would be a participation in the performance of the political duties which the experience of the human race, in all ages, has nearly confined to the coarser sex. I do not rest this opinion solely on the fact that these duties do not seem congenial with the superior delicacy of woman, or compatible with the occupations which nature assigns to her in the domestic sphere. I think it would be found, on trial, that nothing would be gained—nothing changed for the better—by putting the sexes on the same footing, with respect, for instance, to the right of suffrage. Whether the wives and sisters agreed with the husbands and brothers, or differed from them—as this agreement or difference would, in the long run, exist equally in all parties—the result would be the same as at present. So, too, whether the wife of the husband had the stronger will, and so dictated the other's vote, as this, also, would be the same on all sides, the result would not be affected. So that it would be likely to turn out that the present arrangement, by which the men do the electioneering and the voting for both sexes, is a species of representation which promotes the convenience of all and does injustice to none.

Meantime for all the great desirable objects of life, the possession of equal advantages for the improvement of the mind, is of vastly greater importance than the participation of political power. There are three great objects of pursuit on earth—well-being, or happiness for ourselves and families; influence and control over others; and a good name with our fellow-men, while we live and when we are gone. Who needs be told, that, in the present state of the world, a good education is not indeed a sure, but by far the most likely means of obtaining all the ends which constitute material prosperity, competence, position, establishment in life; and that it also opens the purest sources of enjoyment. The happiest condition of human existence is unquestionably to be found in the domestic circle of what may be called the middle condition of society, in a family harmoniously united in the cultivation and enjoyment of the innocent and rational pleasures of literature, art and refined intercourse, equally removed from the grandeurs and the straits of society. These innocent and rational pleasures, and this solid happiness, are made equally accessible to both sexes by our admirable school system.

Then for influence over others, as it depends much more on personal qualities than on official prerogative, equality of education furnishes the amplest means of equal ascendancy. It is the mental and moral force, not political power, which mainly govern the world. It is but a few years since the three greatest powers in Europe, two on one side and one on the other, engaged in a deadly

struggle with each other to decide the fate of the Turkish empire; three Christian powers straining every nerve, the one to overthrow, the two others to uphold the once great and formidable, but now decaying and effete Mohammedan despotism of Western Asia. Not less than half a million of men were concentrated in the Crimea, and all the military talent of the age was called forth in the contest! And who bore off the acknowledged palm of energy, usefulness, and real power in that tremendous contest. Not emperors and kings, not generals, admirals or engineers, launching from impregnable fortresses and blazing intrenchments, the three-bolted thunders of war. No, but an English girl, bred up in the privacy of domestic life, and appearing on that dread stage of human action and suffering, in no higher character than that of a nurse.

And then for fame, to which, by a natural instinct, the ingenuous soul aspires:

—The spur which the clear spirit doth raise,  
(The last infirmity of noble mind.)  
To scorn delights and live laborious days!"

need I say, that the surest path to a reputation for the mass of mankind is by intellectual improvement; and that in this respect, therefore, our school system places the sexes on an equality. Consider for a moment the spectacle presented by the reign of Louis XIV., the Augustan age of France, rich in the brightest names of her literature, philosophy, politics and war—Pascal, Descartes, Corneille, Racine, Lafontaine, Moliere, Bossuet, Fenelon, Bourdaloue, Massillon, Colbert, Conde, Turenne, Catinat. Among all these illustrious names there is not one that shines with a brighter or purer ray than Madame de Sevigne; not one whose writings are more extensively read by posterity; not one in whose domestic life and personal character all future ages will probably take a deeper interest. The other distinguished individuals whom I have mentioned, we regard with cold admiration, as personages in the great drama of history. We feel as if Madame de Sevigne belonged to our own families. The familiar letters principally to her daughter, written by this virtuous and accomplished woman, who preserved her purity in a licentious court, who thought with vigor and wrote with simplicity, earnestness, and true wit in a pedantic and affected age, have given her a place among the celebrities of France, which the most distinguished of them might envy.

Apart then, girls, from a preparation for the pursuits, duties, and enjoyments of life, which more especially pertain to your sex, in the present organization of society, you possess in these advantages of education the means of usefulness and (if that be an object) of reputation, which, without these, would be, in a great degree, monopolized by the stronger sex. The keys of knowledge are placed in your hands, from its elemental principles up to the higher branches, of useful learning. These, however, are topics too familiar on these occasions to be dwelt upon, and I will conclude by offering you my best wishes, that the reputation already acquired by the Dwight School for girls may be maintained under the new organization; that your improvement may be proportioned to your advantages; that your progress may equal the warmest wishes of your teachers, parents, and friends; and that you may grow up to the enjoyment of the best blessings of this world, and the brightest and highest hopes of the world to come.

#### THE LOWE PRINTING PRESS AND OFFICE.

Among the useful appliances of a large educational establishment, or of a Family School, we should name "*The Lowe Printing and Letter-copying Press*," with an outfit of *Composing Stick, Case and Font of Type, Ink Roller, Blocks and Bearers, Can of Ink, &c.*, which can be got of the LOWE PRESS CO., No. 13 Water street, Boston, for \$43. We know of no better school than such a printing office for acquiring the habit of correct spelling, capitalization, punctuation, and paragraphing, while the pupils are printing Circulars, Questions for the daily, weekly, or quarterly examinations, Catalogues, and Blanks of various kinds for the use of the school, or a Monthly Paper for the amusement and improvement of the contributors in composition.

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